



Baseline Study for Vision Healthy India Project : Fight against the Silent Emergency in Delhi

Final Report

Submitted by :

AMS

Research | Consulting | Training

Academy of Management Studies, 3rd Floor, Block A-153, Sector-8, Dwarka, New Delhi
Tel : 011 - 45622401; Fax : 011 - 45622402; E-mail : ams@amsindia.org
(Regd. Office : AMS, 15, Laxmanpuri, Faizabad Road, Lucknow-226 016)
www.amsindia.org

Submitted to :



Save the Children

Save the Children
Bal Raksha Bharat, Plot No. 91,
Sector-44, Gurgaon - 122003,
India

Baseline Study
for
Vision Healthy India Project :
Fight against the Silent
Emergency in Delhi

FINAL REPORT

Submitted to :



Save the Children

Save the Children
Bal Raksha Bharat, Plot No. 91,
Sector-44, Gurgaon - 122003,
India

Submitted by :

AMS

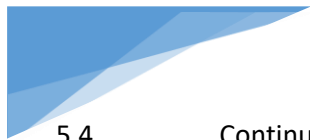
Research | Consulting | Training

Academy of Management Studies, 3rd Floor, Block A-153, Sector-8, Dwarka, New Delhi
Tel : 011 - 45622401; Fax : 011 - 45622402; E-mail : ams@amsindia.org
(Regd. Office : AMS, 15, Laxmanpuri, Faizabad Road, Lucknow-226 016)
www.amsindia.org



CONTENT

EXECUTIVE SUMMARY	(I-V)
Chapter-1: INTRODUCTION	1
1.1 Background	1
1.1.1 Key Determinants of Child Malnutrition.....	2
1.2 The Proposed Intervention: Vision Healthy India – Fight against the Silent Emergency	2
1.3 Justification for the Baseline Study.....	4
Chapter-2: OBJECTIVES AND METHODOLOGY	5
2.1 Objectives	5
2.2 Methodology	5
Chapter-3: HOUSEHOLD AND RESPONDENT PROFILE	10
3.1. Household Profile	10
3.2. Respondent Profile	13
Chapter-4: ANTE-NATAL CARE (ANC) SERVICES	15
4.1. Antenatal Care coverage	15
4.2. IFA supplementation during pregnancy	20
4.3. Consumption of Calcium tablets during pregnancy	21
4.4. Consumption of deworming tablets during pregnancy.....	22
4.5. Receipt of tetanus toxoid injection during pregnancy	23
4.6. Receipt of full antenatal care.....	23
4.7. Awareness about problems caused by iron deficiency	24
4.8. Women ever diagnosed of anaemia.....	24
Chapter-5: INFANT AND YOUNG CHILDREN FEEDING PRACTICES	25
5.1. Early initiation of breastfeeding	25
5.2. Exclusive breastfeeding	26
5.3 Age appropriate breastfeeding.....	27



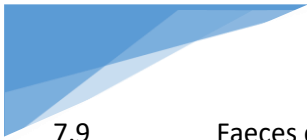
5.4.	Continuation of breastfeeding.....	27
5.5.	Introduction of solid, semi-solid and soft foods.....	29
5.6.	Minimum dietary diversity	29
5.7.	Minimum meal frequency	31
5.8.	Minimum acceptable diet.....	32
5.9.	Support Received by mothers on IYCN.....	32

Chapter-6: MATERNAL & CHILD HEALTH AND NUTRITION..... 35

6.1	Maternal Nutrition.....	35
6.2	Pregnancy related Practices	38
6.3	Post-partum Iron Supplementation in Women.....	41
6.4	Post-partum Calcium Supplementation in Women.....	42
6.5	Dietary Diversity in 2-5-Year-old Children	43
6.6	Immunization in Children	43
6.7	Vitamin A Supplementation in Children	45
6.8	Iron Supplementation in Children	45
6.9	Consumption of Deworming Tablets among Children	46
6.10	Growth Monitoring of Children	46
6.11	Effect of Covid-19 on Healthcare Services and Nutritional Practices.....	47
6.12	Household Nutrition and Child Feeding Practices	50

Chapter-7: WATER, SANITATION AND HYGIENE (WASH) 54

7.1	Awareness about ways to Prevent Sickness.....	54
7.2	Source of Information on WASH Practices in the Last 6 Months	55
7.3	PRIMARY SOURCE OF DRINKING WATER.....	56
7.4	Knowledge and Practices related to Water	56
7.5	Handwashing Practices	60
7.6	Type of Defecation Facility	64
7.7	Reasons for Constructing a Toilet (for Households having a Constructed Toilet in the House)	64
7.8	Reasons for Open Defecation	65



7.9	Faeces disposal Methods in Case of Open Defecation	66
7.10	Stool (youngest child's) Disposal Methods.....	66
7.11	Methods followed for Kitchen Waste Disposal	67

Chapter-8: ANTHROPOMETRIC RESULTS..... 68

8.1	Prevalence of Child Malnutrition	68
8.2	Undernourishment in Pregnant Women	72

Chapter-9: CONCLUSION..... 74

Appendix Tables

Table 8.1 (A): Height for Age (Stunting).....	76
Table 8.2 (A): Weight for Age (Underweight)	76
Table 8.3 (A): Weight for Height (Wasting).....	77



List of Tables

Chapter-1: INTRODUCTION	1
Table 1.1 Key Determinants of Child Malnutrition.....	2
Chapter-2: OBJECTIVES AND METHODOLOGY	5
Table 2.1 Study Coverage	7
Chapter-3: HOUSEHOLD AND RESPONDENT PROFILE	10
Table 3.1 SOCIO-DEMOGRAPHIC PROFILE OF THE HOUSEHOLDS	10
Table 3.2 HOUSING CHARACTERISTICS	12
TABLE 3.3 AGE PROFILE OF RESPONDENTS	13
Chapter-4: ANTE-NATAL CARE (ANC) SERVICES	15
Table 4.1: Number of required minimum number of ANC visits cited by Respondents.....	15
Chapter-6: MATERNAL & CHILD HEALTH AND NUTRITION	35
TABLE 6.1 Food Groups for Women	36
Table 6.2 Involvement of parents in child care and household chores	51
Chapter-7: WATER, SANITATION AND HYGIENE (WASH)	54
Table 7.1 Average number of hours of water supply per week.....	59
Table 7.2 Six critical times of hand washing.....	60
Table 7.3 Type of Toilet Facility in the Households.....	64



List of Figures

Chapter-1: INTRODUCTION	1
Fig 1.1 Extent of Child Malnutrition.....	1
Chapter-3: HOUSEHOLD AND RESPONDENT PROFILE	10
Fig. 3.1 Distribution of Respondents by No. of Children (%).....	14
Fig. 3.2 No. of years of education of the respondents.....	14
Chapter-4: ANTE-NATAL CARE (ANC) SERVICES	15
Fig. 4.1 Proportion of women who received at least 1 ANC check-ups (%).....	16
Fig. 4.2 Proportion of women who received ANC check-up in the 1st trimester (%).....	16
Fig. 4.3. Distribution of Respondents based on the Type of Services received during ANC visits (%)	17
Fig. 4.4 Facility of receipt of ANC services.....	18
Fig. 4.5 Health workers who provided ANC services.....	19
Fig. 4.6 Proportion of women who received various advices during ANC check-ups (N=38)	19
Fig. 4.7 Receipt and consumption of at least 100 IFA tablets during Pregnancy.....	20
Fig. 4.8 Reasons cited for not consuming the IFA tablets received during Pregnancy	21
Fig. 4.9 Receipt and consumption of at least 180 Calcium tablets during Pregnancy	22
Fig. 4.10 Proportion of women who consumed deworming tablets during pregnancy	22
Fig. 4.11 Proportion of women who received TT injection during pregnancy.....	23
Fig. 4.12 Proportion of women who received full antenatal care	23
Fig. 4.13 Awareness about problems caused by iron deficiency	24
Fig. 4.14 Proportion of women ever diagnosed of anaemia.....	24
Chapter-5: INFANT AND YOUNG CHILDREN FEEDING PRACTICES	25
Fig. 5.1 Proportion of children who received Early Initiation of Breastfeeding (%).....	26
Fig. 5.2 Proportion of Infants who were fed Exclusively with Breast milk.....	27
Fig. 5.3 Proportion of Children who are Appropriately Breastfed	27

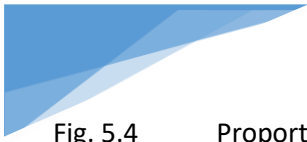


Fig. 5.4	Proportion of Children who received Continued Breastfeeding	28
Fig. 5.5	Practice followed for other children in duration (months) of breastfeeding (%).....	28
Fig. 5.6	Introduction of solid, semi-solid and soft foods	29
Fig. 5.7	Food groups consumed by Children on the previous day	30
Fig. 5.8	Proportion of Children who had Minimum Dietary Diversity.....	31
Fig. 5.9	Proportion of children who had Minimum Meal Frequency	31
Fig. 5.10	Proportion of Children who had Minimum Acceptable Diet.....	32
Fig. 5.11	Kind of support received for IYCN	33
Fig. 5.12	Advices received during meetings/visits/trainings.....	33
Chapter-6: MATERNAL & CHILD HEALTH AND NUTRITION		35
Fig. 6.1	Distribution of Respondents based on Various Food Groups Consumed on the day preceding the survey	37
Fig. 6.2	Women who had minimum dietary diversity (%).....	37
Fig. 6.3	Consumption of iron rich foods (%).....	38
Fig 6.4	Proportion of women who made changes in routine activities on account of pregnancy	39
Fig. 6.5	Proportion of women who started consumption of specific food items while pregnant (%)	40
Fig. 6.6	Proportion of women who avoided specific food items on account of their pregnancy (%)	40
Fig. 6.7	Proportion of women who consumed at least one extra meal on account of pregnancy	41
Fig. 6.8	Proportion of women who had post-partum Iron supplementation	41
Fig. 6.9	Proportion of women who had post-partum Calcium supplementation.....	42
Fig. 6.10	Proportion of 2-5 year old children with Minimum Dietary Diversity.....	43
Fig. 6.11	Proportion of Children who received various vaccines	44
Fig. 6.12	Proportion of Fully immunized Children.....	44
Fig. 6.13	Proportion of children who received Vitamin A supplementation in the last 6 months	45
Fig. 6.14	Proportion of children who consumed IFA tablets in the last 1 year	45
Fig. 6.15	Proportion of Children who consumed deworming tablets in the last 1 year	46
Fig. 6.16	Proportion of Children declared Malnourished after Growth Check-ups	47
Fig. 6.17	Proportion of Mothers who faced issues in accessing child healthcare services.....	48
Fig. 6.18	Various Issues faced in accessing Child Healthcare Services during COVID-19	48
Fig. 6.19	Effect of Covid-19 on maternal health services (%).....	49

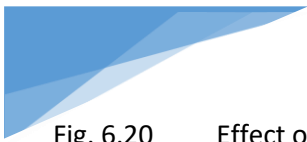


Fig. 6.20	Effect of CoVID-19 on Household Nutrition Practices (%).....	50
Fig. 6.21	Household member taking decisions on child feeding practices (%)	50
Fig. 6.22	Household member primarily responsible for feeding the child (%)	51
Fig. 6.23	Household member responsible for buying various food items	52
Fig. 6.24	Household member fed first when quantity of nutritious food is less.....	52
Chapter-7: WATER, SANITATION AND HYGIENE (WASH)		54
Fig. 7.1	Proportion of women aware about 5 or more ways to prevent sickness (%).....	54
Fig. 7.2	Different ways to prevent sickness cited by respondents (%).....	55
Fig. 7.3:	Proportion of women who had received information on the best WASH practices in the last 6 months (%).....	55
Fig. 7.4	Sources of information on WASH practices in the last 6 months (%)	56
Fig. 7.5	Primary Source of Drinking water (%)	56
Fig. 7.6	Proportion of respondents aware about different ways to keep drinking water safe (%)	57
Fig. 7.7	Proportion of households which treat water before use (%).....	57
Fig. 7.8	Different ways of water treatment used by households (%).....	58
Fig. 7.9	Proportion of households with drinking water quality issues (%).....	58
Fig. 7.10	Drinking water quality issues faced by households (%).....	59
Fig. 7.11	Proportion of women who did hand washings in at least 4 critical times on the day before the survey (%)	60
Fig. 7.12	Proportion of women used soap and water to wash hands at least 4 critical times (%)	61
Fig. 7.13	Proportion of women who used soap and water to hand wash at 6 critical times (%) ..	61
Fig. 7.14	Sources of information on handwashing with soap (%).....	62
Fig. 7.15	Proportion of Women who Recalled seeing a soap in the community toilet (%)	62
Fig. 7.16	Proportion of women who received soap from any external person or organisation (%)	63
Fig. 7.17	Sources of information on handwashing for school going children (%).....	63
Fig. 7.18	Type of Defecation Facilities relied by the households (%).....	64
Fig. 7.19	Reasons for constructing toilet in the house (%).....	65
Fig. 7.20	Reasons for open defecation (%).....	65
Fig. 7.21	Methods of Faeces disposal in case of open defecation	66
Fig. 7.22	Different stool (youngest child's) disposal method adopted by mothers (%)	67

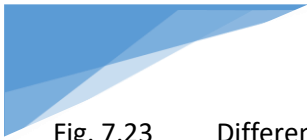


Fig. 7.23	Different kitchen waste disposal method adopted by households (%)	67
-----------	---	----

Chapter-8: ANTHROPOMETRIC RESULTS..... 68

Fig. 8.1	Prevalence of child-under nutrition and multiple anthropometric deficits (%)	69
----------	--	----

Fig. 8.2	Z-score distribution of different forms of malnutrition in children.....	70
----------	--	----

Fig. 8.3	Prevalence of child malnutrition in different age groups (%).....	70
----------	---	----

Fig. 8.4	Prevalence of child malnutrition (%)	72
----------	--	----

Fig. 8.5	Proportion of undernourished pregnant women (using MUAC).....	72
----------	---	----



EXECUTIVE SUMMARY

Child malnutrition is a key cause for over two-fifth of all under five mortalities in India. Children living in metropolitan slums are at even more risk of different under-nutrition states like stunting, wasting etc. Identifying this challenge of poor nutrition levels among infants, children and mothers in “**Bhanwar Singh Camp**” of **Vasant Vihar, Delhi**, Save the children has proposed to implement a project called ‘Vision Healthy India – Fight Against the Silent Emergency” involving an integrated package of multi-sectoral interventions related to WASH, early childhood development and maternal, new-born and child health.

A baseline study was undertaken to set benchmarks of measurable output and outcome indicators at the beginning of the project. These indicators would be monitored at regular intervals so as to not only gauge the extent of progress and impacts at different stages but also to identify the underlying gaps. This report is the outcome of the baseline study conducted in Bhanwar Singh Camp in November, 2020.


Brief Methodology:

For this baseline survey, a **mixed methods approach** involving both quantitative and qualitative data collection was adopted. The quantitative data was collected by conducting **face to face interviews with mothers of 6-59 months old children, pregnant women and lactating women using a semi-structured questionnaire**. Qualitative data was captured by **in-depth interviews** with frontline workers like ASHAs, AWWs, and executive engineer of Delhi Jal board and **focus group discussions** with community members.

A cross-sectional research design was adopted for quantitative data collection. After a detailed house-listing exercise of the area, 217 mothers, 32 pregnant women and 18 lactating women were sampled for the survey. At the end, **184 mothers, 23 pregnant women and 15 lactating women were interviewed. Anthropometric measurements of 232 under five children and 20 pregnant women were also taken** during data collection.

Key Findings:

The semi-structured questionnaire was designed to capture the current nutritional status of under five children, pregnant and lactating women, infant and young child feeding practices,



availability, accessibility and quality of current WASH services in the target area. A snapshot of the major findings of the study is given below.

Household Profile

The questionnaire contained a section on household and respondent profile to understand the socio-economic background and living conditions of all the 222 respondents.

- More than half of the households (60%) in this slum area belonged to scheduled caste and the mean family size was 5.7
- **Major occupation** or source of income in these households were **salaried employees in the private sector (60%)**. These jobs under private sector included gardeners, helpers in shops/restaurants, guards, peons in offices etc. which earned very meagre income for their families.
- The median number of years of education/schooling for the highest qualified member of the households were found to be 10.
- **Nearly every household used clean fuel (LPG – 98%) for cooking.**

Respondent Profile


The age of the respondents at various milestones in life and their educational status were collected to understand how these factors affect the child nutrition practices.

- Mean age of respondents was 27.6 and most of them were below 26 years.
- The mean age at first marriage and at first pregnancy was calculated to be 19.8 years and 22.1 years respectively.
- Mean number of children per women was found to be 2.4
- One-fifth of all the women interviewed (20%) had no formal schooling.

Ante-natal Care Services

To assess the accessibility and coverage of ANC services and to understand the nature of services provided by health workers, pregnant women and lactating women were queried to recall details about the ANC visits they had during their pregnancy term. The following are the key findings.

- A high proportion of **pregnant women (83%)** and **lactating women (80%)** reported receipt of **ANC check-up in the first trimester** of their pregnancy.
- Although around **half of pregnant women** in 2nd and 3rd trimester (44%) and **lactating women (53%) had received 100 or more IFA tablets**, only a little more than one-fourth of these pregnant women (28%) and one-fifth of lactating women (20%) had consumed 100 or more of IFA tablets.

- 
- Around **17 percent pregnant women and 7 percent lactating women** in the study sample had **taken at least 180 calcium tablets** during pregnancy.
 - Only a meagre proportion of 11 percent pregnant women had consumed deworming tablets. None of the lactating women had consumed them.
 - 90 percent of pregnant and lactating women had received TT injection during pregnancy.
 - The data showed very low share, just **20%, of lactating women who received full ANC (24%)**.

Infant and Young Children Feeding Practices

Infant and young child feeding practices is a collection of various practices adopted by mothers that contribute to the nutritional status of children. Mothers were enquired about their awareness about right feeding practices, current and past breastfeeding, food items fed to the child on the previous day etc. to identify areas that require interventions. The key findings related to this component are given below.

- Even though the proportion of women ever breastfed was very high in the sample (99%), only **33 percent of 0-23 months old infants children were initiated with early breastfeeding**.
- The survey found that **60 percent of infants aged 0-5 months were exclusively breastfed** for 6 months.
- More than two-thirds of mothers (71%) with infants aged 6-8 months had started introducing complementary feeding after 6 months.
- Extended breastfeeding at 1 year of age (83%) was more common than continued breastfeeding at 2 years (74%).
- **47 percent children aged 6-23 months had the prescribed minimum dietary diversity, 76 percent had minimum meal frequency and 33 percent had minimum acceptable diet.**

Maternal and Child Health and Nutrition

This section discusses maternal nutritional practices, changes in diet and routine activities during pregnancy, post-partum supplementation, vaccination of children and the effect of Covid-19 on accessibility of various services and household nutrition. Presented below are the key findings of this chapter.

- Proportion of women in the reproductive age with **minimum dietary diversity was low, at 38%**.



- Survey found that around half of these women consumed iron rich foods the previous day of survey.
- Sixty percentage of the lactating women in the study sample had taken IFA supplementation in the past 6 months. Average consumption stood at 37 tablets.
- Similarly, 60 percent of lactating women also had consumed calcium tablets in the post-partum period. Mean number of tablets consumed was found to be 40.
- A good proportion of more than three-fourth (76%) of the children in this slum were fully immunized.
- A little less than one-third of the children only had vitamin A supplementation.
- Almost half of the mothers (45%) stated having faced some difficulties related to child healthcare services during Covid-19 pandemic.
- During Covid-19 pandemic, about two-thirds of the households (65%) could not afford food items like pre-covid times.

Water, Sanitation and Hygiene

Along with nutrition, WASH practices also greatly affect the nutritional status and early childhood development in children. This study reviewed availability of water, quality issues related to water supply, defecation, sanitation and hygiene related practices followed in the households etc. The key findings are summarised below.

- The survey found that 85 percent women were aware about at least five ways to prevent sickness.
- While, **around 60 percent population used safe drinking water source, another 39 percent relied on unimproved sources** which included bottled water and tanker water.
- A very low proportion of less than one-fifth of these households (18%) in the sample had used some methods to treat water before use.
- A little over 15 percent households experienced water quality issues and half of them complained of bad taste in the drinking water.
- A good proportion of 80 percent women hand-washed at least 4 critical times
- **Majority of the households use shared community toilet facility** (64%) and an alarming proportion of 9 percent households still practice open defecation calling for immediate actions/interventions. Remaining households had their own toilets constructed.



- About three fourth of women who had been to a community toilet said they had never seen a soap there.
- A very large proportion (95%) of households practicing open defecation said that they leave the faeces as it is out in the open.
- A large majority of the respondents (81%) mentioned lack of toilet in the house as the reason for continuing open defecation.
- Only around 60 percent women used safe stool (youngest child's) disposal methods.

Anthropometry

Anthropometric measurements like height/length, weight, mid-upper arm circumference were collected to identify under five children and pregnant women with various malnutrition states which will help in planning appropriate interventions.

- A little less than a fourth of under five children in this population were found to be stunted, 10 percent were wasted and 21 percent were underweight.
- Only 2 percent of the children aged 6-59 months had severe acute malnutrition, where as 10 percent children were found to have moderate acute malnutrition.
- The proportion of undernourished pregnant women in the sample was found to be 35 percent by using MUAC measurements.

Overall, study findings reflect that WASH is an integral area which requires considerable focus in the form of technical support from authorities and through behavioural change interventions in order to inculcate safe and improved practices in the community. On the realm of maternal and child health, while access to services was found to be satisfactory, there is dire need to focus on the supply and intake of requisite supplements. Mothers reflected desirable knowledge about breastfeeding and infant and young child nutrition suggesting there is no exigency to focus on creating awareness, instead efforts shall be made in stimulating and translating the existing knowledge into recommended dietary practices. Added emphasis also need to be given to maternal nutrition. The support extended by frontline workers in all these aspects also requires strengthening through program activities

It is hoped that the findings and insights presented in the report would serve as strategic inputs for designing the approach towards intended intervention; to meet the desired objectives of overall development of the slum community in health, nutrition and sanitation.

INTRODUCTION



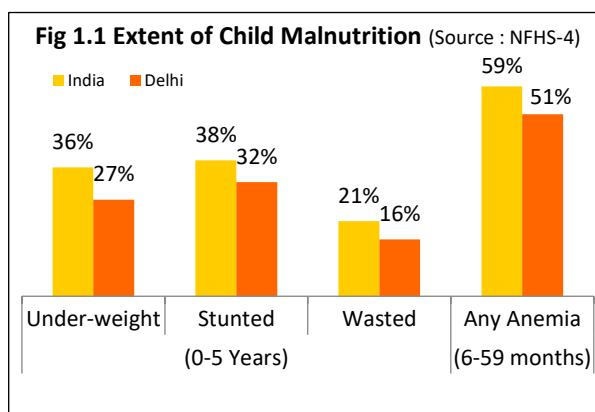
1.1 BACKGROUND

Children are the future of any country. Acknowledging this fact, India's National Policy for Children (1974) declared children as "nation's supremely important assets". However, even till today the country continues to be home to an alarmingly high proportion of malnourished children. As per the National Family Health Survey (NFHS-4), over one-third (36%) of children under 5 years of age are underweight (too thin for their age), nearly two-fifth (38%) are stunted (too short for their age), and one-fifth (21%) are wasted (too thin for their height).

Malnutrition is a key cause for over two-fifth of all under-5 mortalities in India. It exposes children to greater risk of dying from infections, increases their frequency and severity, and delays recovery. Poor nutrition in the first 1,000 days of a child's life can also lead to stunted growth, which is irreversible and associated with impaired cognitive ability and reduced school & work performance.

Besides, nearly three-fifth children aged 6-59 months are anaemic having haemoglobin levels below 11.0 g/dl. The Global Nutrition Report 2018 estimated the number of stunted children in India at 46.6 million, which is nearly one-third of all the stunted children worldwide.

The nutritional status of children in the national capital region of Delhi is not too far behind the national figures. Here, the metropolitan areas are dotted with urban slums and unauthorized colonies that are home to about a half (49%) of its total population. Of these, the most vulnerable are the children; especially new-borns and infants (0-36 months) whose health depends entirely on the



availability of mother to breastfeed, the ability of caretaker and household to provide nutritious meals, the quality of public healthcare system and the overall community support. Here, even as the IMR is at a high of 35, only 30% children under-3 are breastfed within one hour of birth, against the national average of 41%. Children aged 6-23 months who receive adequate diet are only a shocking 5.6%, and only half of children below 6 months are exclusively breastfed, which is much lower than the national average of 55%.

The prevalence of malnutrition has been recognized as a key factor that can impact not only the health and well-being of future generations but also the overall economic progress of the entire nation. Accordingly, ending all forms of malnutrition globally has been included by the United Nations as one of its Sustainable Development Goals (SDGs) to be achieved by year 2030.

1.1.1 Key Determinants of Child Malnutrition

The *Urban Hungama Survey-2014* reported the following key drivers of stunting among children living across the urban slums of 10 most populous cities of India:

Direct Determinants	Indirect Determinants
<ul style="list-style-type: none"> ▪ Poor infant and young child feeding practices ▪ Poor quality of dietary intake (meals low in quantity, nutrient density or variety, or eaten infrequently) ▪ Inadequate care of vulnerable members (e.g. 'unfair' sharing of food within families) ▪ Lack of government service delivery centres ▪ Disease (HIV/AIDS, diarrhoea, respiratory tract or ear infections, measles, hookworms and other gut parasites) 	<ul style="list-style-type: none"> ▪ Household poverty leading to food insecurity ▪ Inadequate childcare practices ▪ Low maternal education ▪ Nutritional status of mother ▪ Poor access to health services ▪ Lack of access to clean drinking water & sanitation ▪ Poor sanitation and hygiene practices ▪ Lack of information, political & economic insecurity ▪ Lack of resources and gender inequity

The findings from the said survey are also supported by Lancet which stated that *“Nutrition interventions are not sufficient to tackle the problem of under nutrition: even at 90 percent coverage the core set of proven nutrition interventions in high nutrition burden countries would only decrease stunting by 20 percent globally”* (Lancet series 2013). Thus, reducing and ultimately eliminating the burden of malnutrition among children in urban slums requires a multi-sectoral approach involving interventions across at least the nutrition and WASH sectors.

1.2 THE PROPOSED INTERVENTION: VISION HEALTHY INDIA – FIGHT AGAINST THE SILENT EMERGENCY

Acknowledging the need for WASH infrastructure in urban slums of Delhi, the Save the Children (SC) has implemented a targeted project in the **“Bhanwar Singh Camp”** slum of Vasant Vihar, New Delhi. Here, the SC collaborated with Delhi Urban Shelter Improvement




Board (DUSIB), Govt. of Delhi to build a Community Managed Toilet (CMT) Complex. Under the same, the following activities are taken up on an on-going basis towards making the CMT infrastructure self-sustainable and functional with the support and contribution of the community:

- Formation and capacity building of CMT user groups
- Engaging with community groups and mother groups for use of WASH facilities
- Capacity building and handholding support of self-help groups for income generation

Now, even after attaining sustainability of operations under the said project, **the key challenge of poor nutrition levels among infants, children and mothers in this slum remains unaddressed**. Therefore, to address this lacuna, the SC has proposed to implement another project titled “Vision Healthy India – Fight Against the Silent Emergency” involving an integrated package of multi-sectoral interventions related to not just WASH and nutrition but also early childhood development (ECD) and maternal, new-born and child health (MNCH).

Package of Interventions under Proposed Project – Vision Healthy India (VHI)	
(A) EARLY CHILDHOOD DEVELOPMENT (ECD)	(B) WATER, SANITATION & HYGIENE
<ul style="list-style-type: none"> ▪ Protected, safe and sanitary child friendly spaces for early childhood stimulation, exploration and play ▪ Hygiene for baby/ child (regular bathing, hand washing, sanitary play and mouthing/ teething objects) ▪ Clean and protected eating spaces for babies and young children 	<ul style="list-style-type: none"> ▪ WASH in health /nutrition care facilities ▪ Clean hands at key times ▪ Access to adequate, safe drinking water supply ▪ Consistent sanitary toilet usage & proper disposal of faeces (children and animal) ▪ Personal and household hygiene practices
(C) NUTRITION	(D) MATERNAL, NEWBORN & CHILD HEALTH
<ul style="list-style-type: none"> ▪ Promotion of appropriate IYCF practices ▪ Demonstration and counselling on home augmented appropriate complementary feeding with dietary diversity ▪ Safe food handling and protected eating spaces ▪ Nutrition Child Care Sessions (NCCS) ▪ Treated drinking water > 6 months ▪ Freshly cooked, diverse and nutritious foods 	<ul style="list-style-type: none"> ▪ Capacity building of frontline health workers on counselling skills of WASH and nutrition services ▪ Counselling and sensitization of pregnant and lactating mothers on their health and nutrition issues, child survival, growth and development



The VHI Project is proposed to be implemented with the overarching goal to decrease the burden of child under-nutrition through both preventive and curative measures while improving coverage of essential nutrition and WASH interventions in the chosen slum community. Its intended outcomes are:

Targeted Outcomes:-

Outcome-1: Improved nutrition status of children under 5 and P&L women in target community.

Outcome-2: Improved access to quality WASH services and improved WASH practices in target community.

1.3 RATIONALE OF THE BASELINE STUDY

Given the sizeable nature of resources planned to be expended on the project, it is imperative to **closely monitor its progress** towards the targeted objectives. With this viewpoint, Save the Children (SC) has planned to adopt an integrated approach for monitoring, evaluation, accountability and learning (MEAL) leading to continuous improvement of project's implementation strategy. Under the same, values of key measurable output and outcome indicators would be monitored at regular intervals so as to not only gauge the extent of progress and impacts at different stages but also identify the underlying **gaps** and accordingly devise **corrective strategies** for greater effectiveness. For the same, however, a robust set of **benchmarks** would need to be established at the start against which all future **output** and **outcome** indicators may be compared and evaluated. Such benchmarks are established by conducting a comprehensive **baseline study** within the "Bhanwar Singh Camp" slum of Vasant Vihar, New Delhi.

The sections presented ahead detail out the methodology & results of the baseline study.

OBJECTIVES AND METHODOLOGY



2.1 OBJECTIVES


The specific objectives of the **baseline study** leading to **benchmarking of key outcome indicators** at various levels of project implementation are to:

- i. Assess **baseline estimates** of output and outcome level indicators for the following aspects:
 - a. Current nutritional and health status of children under-5 and pregnant/lactating mothers in target community;
 - b. Current status of Infant and Young Child Feeding (IYCF) practices;
 - c. Nature of service delivery through community service providers;
 - d. Availability, accessibility and quality (use and child friendliness) of current WASH services in the target area;
 - e. Knowledge, Attitude and Practices (KAP) related to WASH in target community.
- ii. Identify the **facilitating factors** that support the project in attaining the intended outcomes;
- iii. Identify the **restraining factors** that hinder smooth progression of the project towards attaining the intended outcomes;
- iv. Identify the underlying **gaps** in project implementation;
- v. Provide **recommendations** for taking remedial measures towards smooth progression of the project.

2.2 METHODOLOGY

(A) Data Collection tools

For the baseline survey, a **mixed methods approach** involving both **quantitative** and **qualitative** data collection was adopted. The **quantitative data** was collected by conducting **face-to-face interviews** of the targeted respondents at household level using semi-structured questionnaire. Under this arrangement, while most of the questions were structured, some open-ended questions in order to capture the qualitative information shared by such



respondents were also incorporated. Simultaneously, **anthropometric measurements** of **children under-5** and **pregnant women** were taken for assessing the nutritional outcomes among them.

While conducting the interviews with mothers/caregivers, a questionnaire specific to the child was administered to them. These questionnaires contained questions regarding the age, diet, recent illnesses, breast-feeding and weaning, hygiene practices, dietary supplements / nutritional supplements and WASH practices.

The **qualitative data** was captured by conducting **in-depth interviews (IDIs)** with the frontline workers charged with providing public health & nutrition related services to the slum dwellers, and the concerned executive engineer of Delhi Jal Board deployed in the zone. This provided us insights into the providers' perspective regarding the nature and extent of services delivered by them in the slum area.

The qualitative data was also captured through **focus group discussions (FGDs)** among the community members in the targeted slum area in order to assess nature of WASH and public health & nutrition practices and challenges faced by the slum dwellers.

Overview of Data Collection Tools Used for Baseline Study

- I. Check-list** – for secondary data collection
- II. In-depth Interview (IDI) Schedule** – for public & nutrition and WATSAN services staff (ANM, AWW, ASHA, Executive Engineer - Delhi Jal Board);
- III. FGD Topic Guide** – for slum community members;
- IV. Face-to-face Interview Schedules** – for households, including mothers of children under-5, pregnant & lactating women, etc.;
- V. Anthropometric Measurements** – of children under-5 years, and pregnant women;

(B). Research Design

For the baseline study, a **cross-sectional research design** involving data collection from all the key stakeholders within the targeted slum area was adopted.

(C). Sampling

Sampling Universe

The Vision Healthy India project is proposed to be implemented across the “Bhanwar Singh Camp” slum of Vasant Vihar, New Delhi. A detailed listing of households was carried out a

week before data collection. The sampling universe for the baseline study incorporated all 1001 listed households and the mothers of children under-5, pregnant & lactating women, etc. residing within the slum area.


Sample Size & Selection

The study was proposed to be undertaken by selecting a representative sample of households having children 0-5 years from the targeted slum area. The proposed minimum sample size was calculated to be 384 based on the total household count of 1500 households in the slum area notified by Save the Children team. Similarly, considering the prevailing birth rate in urban slums, sample size of pregnant women and lactating women were calculated to be 108 and 78 respectively.

But according to the very recent house-listing conducted as part of the baseline survey to generate sample frame, only 1001 households were listed in Banwar Singh Camp area. Out of these 1001 households, only 767 houses were currently occupied. The residents of this slum are mostly migrants from Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand and Rajasthan. There was a large scale migration of these labourers due to Covid-19 and the subsequent lockdown, and hence listing exercise resulted in reduced number of occupants than the number expected during the inception phase of the project. **House-listing exercise identified a total of 217 mothers of 6-59 months aged children, 32 pregnant women and 18 lactating women. As these numbers were below the estimated sample size, it was decided to interview all these women as part of the survey.**

Table 2.1 Study Coverage		
Sl. No.	Targeted Respondents	Number
1.	Mothers of children aged 6-59 months	184
2.	Pregnant women	23
3.	Lactating women	15
4.	In-depth interviews <ul style="list-style-type: none"> • AWWs • ASHAs • ANM • Engineer, Jal Board 	7 3 2 1 1
5.	FGDs	3

At the end of the survey, as shown in Table 2.1, **184 mothers, 23 pregnant women and 15 lactating women were interviewed. Anthropometric measurements of 232 under five children and 20 pregnant women were also taken during data collection.**



Qualitative data was collected by conducting in-depth interviews of AWWs, ASHAs, ANM, engineer of Jal Board, Delhi and through focus group discussions.

(D). Mode of Data Collection

The primary data collection under the assignment was carried out by using questionnaires developed particularly for the purpose in **computer-assisted personal interviewing (CAPI)** mode. For the same, **tablets** that support both "off-line" and "on-line" modes of data collection were used. These smartphones were earmarked from our own pool that we maintain regularly for undertaking similar large-scale field surveys involving voluminous data samples. Data collection was completed in a week by 8 Research Investigators and 2 supervisors.

(E). Data Quality Assurance

Fieldwork quality under the assignment was ensured by the **Supervisors** who conducted both **spot-checks** and **back-checks** of the data enumerated by field teams. Besides, the Field Supervisors checked the consistency and possible omissions in filled-up questionnaires on 100% basis at the end of each day's fieldwork. Fieldwork monitoring was undertaken by **Field Coordinators** and **core staff members** on sample basis. In this way, the field teams were duly assessed for their performance leading to taking corrective actions on a regular basis. Besides, the Supervisors also lent supportive supervision to the field staff.

(F) Data Management

The enumerated data was duly uploaded on to AMS's server by Supervisors after checking for inconsistencies at the end of each day. Thereafter, the Supervisors and Field Coordinator separately accessed the uploaded data using their respective login Id and passwords on the **ODK** platform and conducted random back-checks of the collected data. During the process, inconsistencies in data were duly rectified and uploaded on to the server so as to enhance the reliability of the data enumerated by our field teams.

(G) Data Validation and Analysis

Collection, collation, analysis, and synthesis of qualitative and quantitative information, gathered and analysed using appropriate sources, tools, and methods is the cornerstone of needs assessments that allows decision makers to plan a strategic, appropriate, and coordinated response. A combination of different types and sources of data is required to build a holistic picture of the targeted population.



After downloading the enumerated data from the server, the back-end team validated it by duly subjecting it to range and consistency checks through specially developed Field Check Tables (FCTs). **The validated quantitative data was analysed by using SPSS software.**

Descriptive statistics (range, mean, standard deviation, etc.) was calculated for each variable. **Percentages and values** for various estimates desired under the study were also calculated using the specified formulae for each. Cross-tabulation was done for categorical variables

Sub-group analysis would also be undertaken to assess the difference of socio-economic status across groups of respondents –educational status, age group, gender; etc. **Cross tabulations** and **correlations matrix** were drawn for depicting any specific patterns in the data with regard to any specific subgroup.

As regards the **qualitative information** gathered through interview with key functionaries and focus group discussion, the first step was verbatim transcription of all the information collected. The same was analysed in a systematic and methodological manner. The transcribed information was then scrutinized for its primary as well as latent content.

The chapters ahead will proceed to shed light on the findings of the baseline evaluation.

HOUSEHOLD AND RESPONDENT PROFILE

3

CHAPTER

An understanding of socio-economic and demographic context is critical as it serves as the backdrop to the lived experiences or realities that the target respondents in the study area face. While the previous chapter gave a brief idea of methodology and evaluation design adopted for the study, the following sections in this chapter presents a holistic description of the profile of the households and the target respondents. Such an understanding of social and cultural forces, described by key socioeconomic characteristics of the **222 households, comprising of 23 pregnant women, 15 lactating women and 184 mothers of children aged 6-59 months** surveyed as part of the study, is essential as they interact and inform everyday lives of the individuals and community as a whole.

3.1. HOUSEHOLD PROFILE

All the respondents were asked about the demographic, socio-economic and housing profile of their households to understand the overall picture of the study area. These indicators can provide a baseline structure on which interventions can be planned.

(A). Socio-demographic Profile

For understanding the socio-demographic profile, details such as, social category and religion of the household, structure, number of members, education of the highest qualified member, and main occupation, were collected from the respondents.

Table 3.1 SOCIO-DEMOGRAPHIC PROFILE OF THE HOUSEHOLDS				
Particulars	Lactating Women (N=15)	Pregnant women (N= 23)	Mothers (N=184)	Overall (N=222)
	%	%	%	%
SOCIAL CATEGORY OF THE HOUSEHOLDS				
• Scheduled Caste	40	52.2	62.5	59.9
• General	40	26.1	20.7	22.6
• Other Backward Class	13.3	17.4	13	13.5
• Scheduled Tribe	6.7	4.3	3.8	4.1
RELIGION				
• Hindu	93.3	95.7	91.8	92.3
• Christian	6.7	-	3.8	4.1

Table 3.1 SOCIO-DEMOGRAPHIC PROFILE OF THE HOUSEHOLDS				
Particulars	Lactating Women (N=15)	Pregnant women (N= 23)	Mothers (N=184)	Overall (N=222)
	%	%	%	%
• Muslim	-	4.3	2.2	2.4
• Buddhist	-	-	2.2	2.2
STRUCTURE OF THE HOUSEHOLDS				
• Nuclear	46.7	34.8	58.7	55.4
• Joint	53.3	65.2	41.3	44.6
MEAN FAMILY SIZE	6	6	5.6	5.7
MEDIAN YEARS OF EDUCATION OF THE HIGHEST QUALIFIED MEMBER OF THE HOUSEHOLD	10	12	10	10
MAIN OCCUPATION OF THE HOUSEHOLD				
• Salaried employee – private	60	47.8	61.4	59.9
• Casual Labour	20	17.4	17.4	17.6
• Domestic worker	13.3	13	5.4	6.7
• Trading / own business	-	4.3	5.4	5.3
• Unemployed	-	4.3	4.9	4.8
• Self employed	6.7	13	2.7	4.0
• Salaried employee – Govt.	-	-	1.1	1.1
• Retired	-	-	1.1	1.1
• Farming/Agriculture	-	-	0.5	0.5

Majority of the households belonged to scheduled caste (60%) followed by General and OBC households. Almost all the households followed Hindu religion (93%). Even though more than half of the households were nuclear families (55%), the mean family size for this urban slum was 5.7 members. Major occupation or source of income in these households were salaried employees in the private sector (60%). These jobs under private sector included gardeners, helpers in shops/restaurants, guards, peons in offices etc. which earned very meagre income for their families. Other main occupations of these households were casual labour (18%), domestic work (7%) and business (5%). Five percent of the respondents had also mentioned that their main bread winner as unemployed at the time of the survey. Number of years of education of the highest qualified member in the family was also explored and the median number of years of education/schooling for these members were found to be 10.

(B). Housing Characteristics

Housing characteristics provide an insight into the living conditions of people in the study area. Details such as type of housing, place for cooking, provision of ventilation, fuel used for cooking, source of drinking water, and type of toilet facilities were collected for the purpose.

Table 3.2 HOUSING CHARACTERISTICS				
Particulars	Lactating Women (N=15)	Pregnant Woman (N= 23)	Mothers (N=184)	Overall (N=222)
	%	%	%	%
TYPE OF HOUSES				
• Pucca	53.3	60.9	65.8	64.4
• Semi-pucca	46.7	39.1	33.7	35.1
• Kachha	-	-	0.5	0.5
PLACE FOR COOKING				
• In the house, no separate room	60	56.5	62.5	56.9
• In the house, separate room	40	43.5	35.3	36.5
• In a separate building	-	-	5.0	5.0
• Outdoors	-	-	1.6	1.6
VENTILATION FOR COOKING SPACE (Base: Households with indoor cooking space)				
• Window	33.3	39.1	47.8	45.9
• None	40.0	43.5	32.6	34.2
• Exhaust Fan	26.7	21.7	27.2	26.6
MAIN TYPE OF FUEL USED FOR COOKING				
• Improved cooking fuel (LPG)	100	100	98.4	98.4
• Unimproved cooking fuel (Firewood)	-	-	1.6	1.6

Interviewers took a note of the type of building and cooking facilities of the households. **Around two-third households lived in pucca buildings (64%), while the remaining had semi-pucca structures.** More than half of the households cooked inside the house with no separate room for kitchen (57%) indicating minimal housing conditions. A little over one-third of the households had separate space as kitchen inside the house. Ventilation is critical for cooking spaces as it clears out unhealthy fumes and reduces exposure to combustion products. Ambient air pollution from cooking can cause serious respiratory conditions. About **two-thirds of the households (66%) with indoor cooking facility had either a window or exhaust fan facility for ventilation** of the cooking space. Appreciably,

nearly every household used clean fuel (LPG 98%) for cooking. Only a negligible proportion used firewood (2%) as the main source of fuel.

3.2. RESPONDENT PROFILE

All the respondent women were inquired about their basic demographic details to understand how these basic characteristics affect the infant feeding and nutrition practices adopted by them.

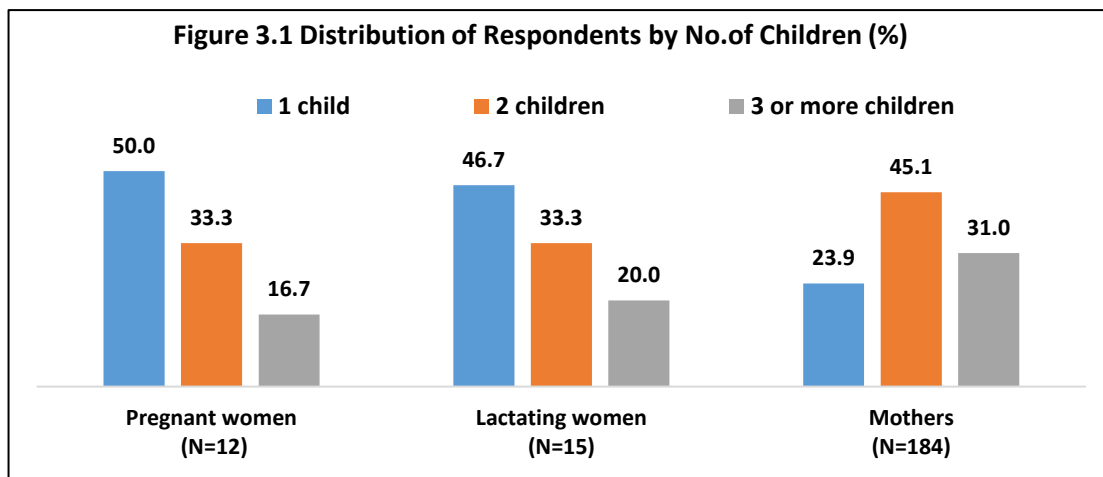
(A). Age Profile of the Respondents

TABLE 3.3 AGE PROFILE OF RESPONDENTS				
Particulars	Pregnant Women (N=23)	Lactating Women (N=15)	Mothers (N=184)	Overall (N=222)
Age category of the respondents (n)				
• Less than 26 years	17	10	73	100
• 26 – 30 years	6	4	78	88
• More than 30 years	0	1	33	34
Mean age of the respondents	24	24	28.4	27.6
Mean age at first marriage	19	19	20.0	19.8
Mean age at first pregnancy	24	21	21.9	22.1

Under this section, women were mainly enquired about their age at different milestones of life. The respondents were asked about their age at last birthday to obtain the age of these women at the time of the survey. Most of the women respondents belonged to 'less than 26 years' category. The mean age of the respondents was found to be 27.6. Mothers of children aged 6-59 months registered higher mean age of 28 years while that of pregnant and lactation women were 24 years. Similarly, age at marriage and age at pregnancy were obtained from the respondents. If any woman has had multiple marriages or multiple pregnancies, her age at first marriage and first pregnancy were noted. The **mean age at first marriage and at first pregnancy was calculated to be 19.8 years and 22.1 years respectively.**

(B). Number of Children

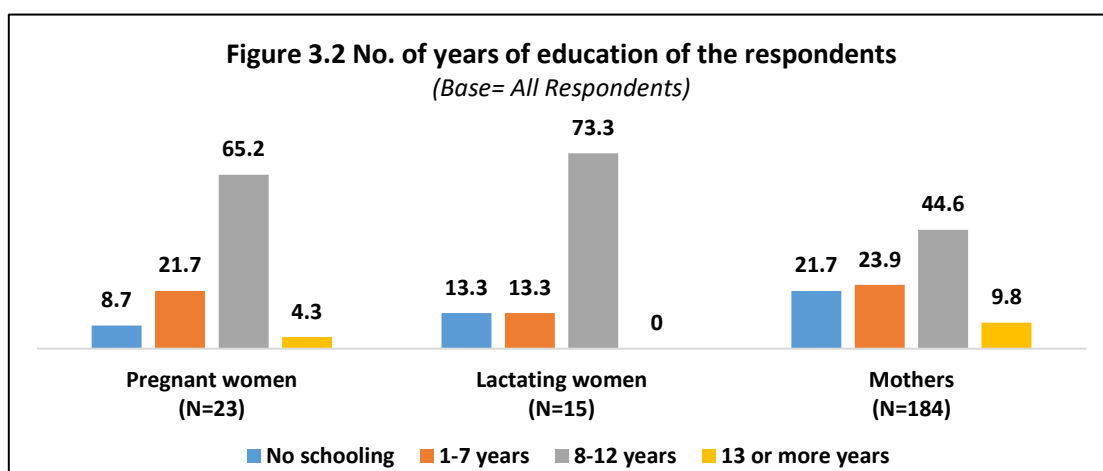
Respondents were also enquired about the number of children they have. Figure 3.1 shows that around half of pregnant and lactating women and one-fourth of mothers had one child each.



Also, almost half of the mothers (45%) had two children each whereas only one-third of lactating women and pregnant women had two off-springs. On the whole, a greater number of mothers of child aged 6-59 months reported to have more than one child compared to currently pregnant and lactating women. The **mean number of children per women** in the study area was found to be **2.4**.

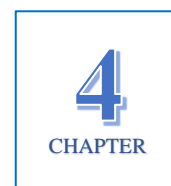
(C). Education Level of the respondents

Another important demographic indicator is the educational status of the women in the society. Female literacy and higher educational status of women are found to have significant effect on the overall health and development of the society as a whole.



All the surveyed respondents were enquired about the number of years of education they attained. Majority of pregnant women, lactating women and mothers had 8-12 years of education. Even then, **one-fifth of all the women interviewed (20%) had no formal schooling**. The **median years of education** of these women was found to be **10 years**.

ANTE-NATAL CARE (ANC) SERVICES



The goal of ANC services is to prevent, detect and manage complications related to pregnancy and childbirth, thereby reducing the huge burden of maternal and infant mortality and morbidity. Data on coverage of these ANC services would provide a foundation on which various future interventions linked to maternal and child health are planned. Pregnant women in the 2nd and 3rd trimester and lactating women (mothers of children aged 0-5 months) were asked to recall the ANC services they received during pregnancy to assess the extent of ANC coverage among women in the study area. Sections ahead describe the survey results generated related to these aspects based on the responses from pregnant and lactating women.

4.1. ANTENATAL CARE COVERAGE

Antenatal care coverage indicator describes the access to and exercise of maternal healthcare system of the region. World Health Organisation recommends at least four ANC check-ups during pregnancy for every woman. This model developed by WHO is called The Focused ANC (FANC) model or the Basic ANC covering four ANC visits occurring between 8-12 weeks, 24-26 weeks, at 32 weeks, and 36-38 weeks of gestation¹. In India, according to National Rural Health Mission, antenatal care should comprise of at least four visits, occurring between 1-12 weeks, 14-26 weeks, 28-34 weeks and 36-term. It is also mandatory to register pregnancies within 12 weeks of gestation; this improves the coverage and quality of services provided to pregnant women.

(A). Awareness about Desired number of ANC Checkups

Every practice starts with adequate and accurate awareness. To understand the level of awareness among the respondents in the study area, all pregnant women and lactating women were queried about their knowledge on the minimum required number of ANC check-ups during pregnancy.

Respondent	Average no. of visits	Minimum	Maximum
Pregnant women (N=23)	6	3	3
Lactating women (N=15)	6	3	3

¹ WHO, "Antenatal Care."

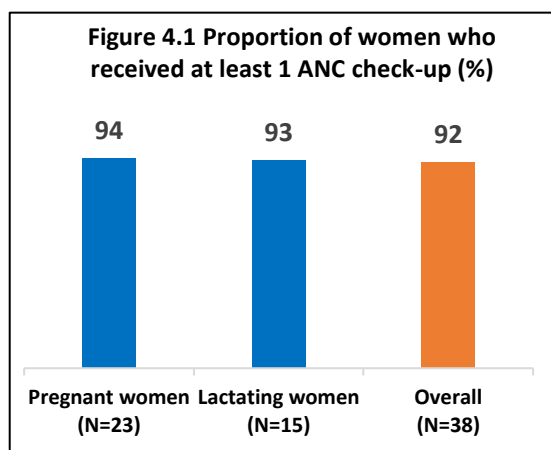


Responses ranged from 3 to 9 and on an average 6 ANC visits were considered as the required minimum number of ANC check-ups by these women. Five percentage of pregnant and lactating women mentioned that they were not aware about the minimum number of ANC visits. Overall, around **four-fifth of all pregnant women (78%) and lactating women (80%) mentioned at least four as the minimum number of recommended ANC check-ups that one should take during pregnancy.**

(B). Receipt of ANC among Respondents

All the pregnant women and lactating women were then asked to recall the number of ANC visits they had during their current or last pregnancy. Appreciably, **92% of them had received at least 1 ANC.** Share of pregnant and lactating women who received at least one ANC check-up is 94 percent and 93 percent respectively (Figure 4.1).

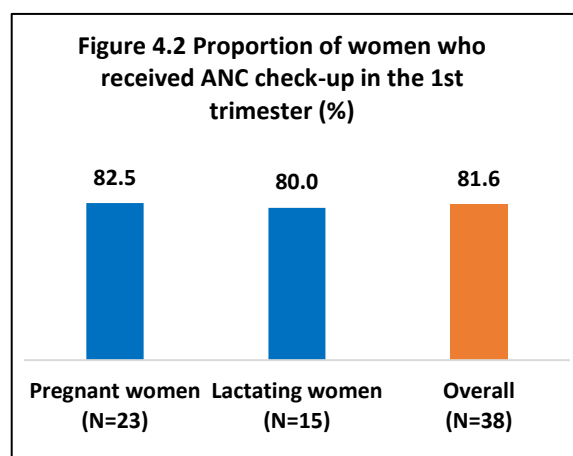
Husbands of all these women accompanied them for at least one ANC check-up and average number of times they had gone with women was found to be 3. For further analysis, share of women who received at least four ANC check-ups was looked into. Only lactating women is included for calculating the same. **12 out of 15 lactating women (80%) interviewed were found to have**



availed recommended level of minimum four ANC check-ups during their last pregnancy. These results suggest that access to maternal health services during pregnancy in the study area is quite satisfactory.

(C). Receipt of ANC in the first trimester

First ANC check-up determines whether the woman requires standard/basic antenatal care or special attention and more visits. Even though WHO basic ANC model and Indian NRHM recommends the first ANC anytime within 12 weeks (first trimester), it is always better to have the first ANC visit as early as possible to detect any underlying conditions requiring special care/treatment.



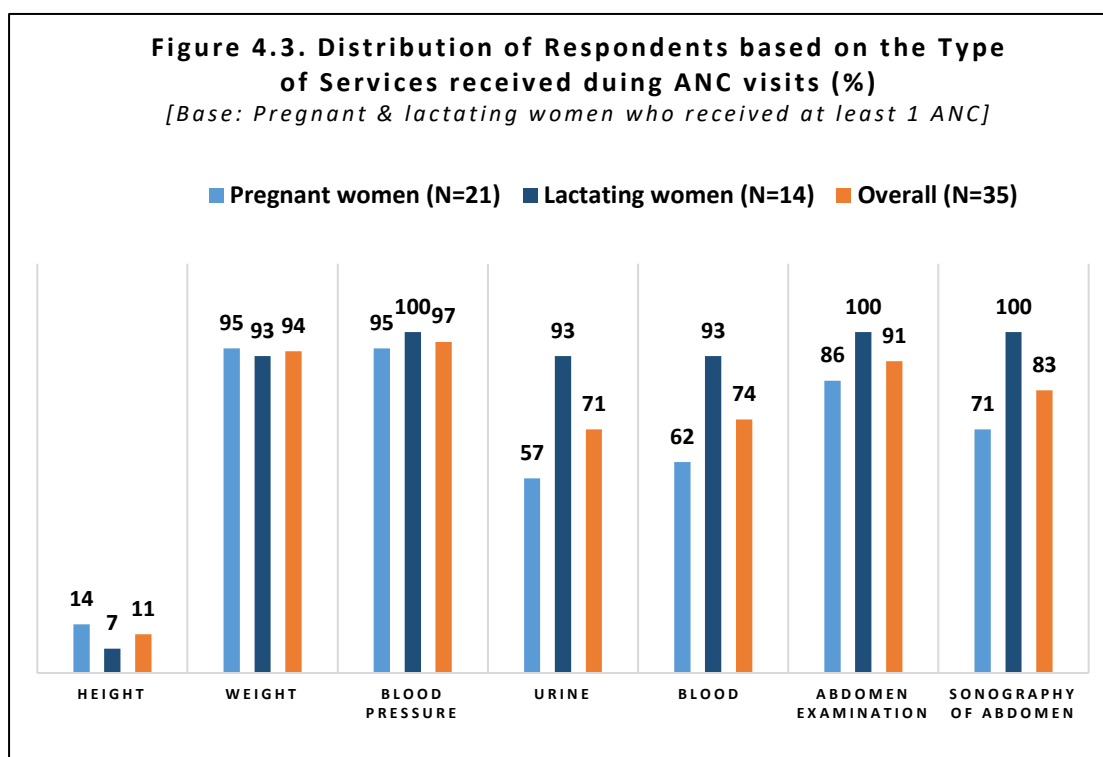
Stage of receipt of first ANC check-up among the pregnant and lactating women was also looked into by asking them to recall when they received their first ANC check-up. **The survey found satisfactory proportions of pregnant women (83%) and lactating women (80%) who received ANC in the first trimester of their pregnancy.**

(D). Type of Services Received During ANC Visits

Antenatal care can help women to experience a risk free pregnancy term and child birth. ANC visits offers many services, vital to detect any risks to maternal or foetal health. Some of the services offered during ANC visits in India are,

- i. Measurement of weight
- ii. Measurement of height
- iii. Measurement of blood pressure
- iv. Examination of urine
- v. Examination of blood
- vi. Examination of abdomen
- vii. Sonography of abdomen

Pregnant and lactating women who had at least one ANC check-up were further asked whether they had received the aforesaid services in any of their ANC visits during pregnancy. They were probed by asking individually about each and every type of critical tests and examinations that they were required to receive as part of the ANC check-ups.

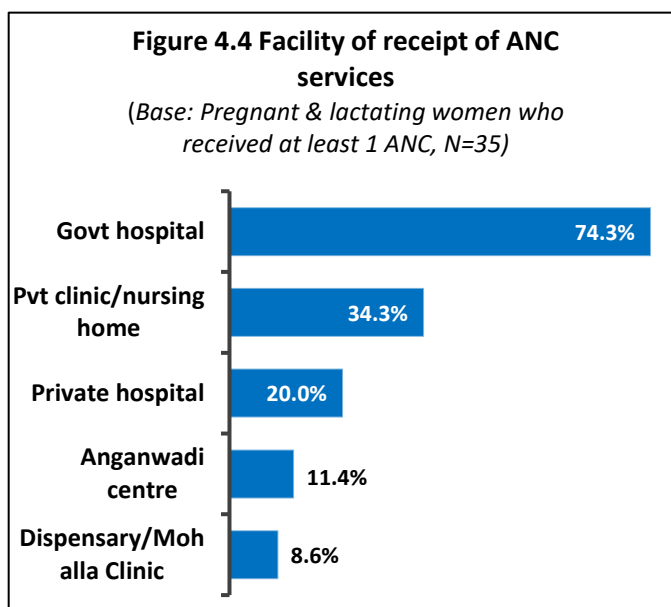




As shown in figure 4.3, **except for height measurement, all the other services were offered to a large proportion of pregnant and lactating women during ANC check-ups.** Compared to lactating women, slightly lower proportion of pregnant women had their urine and blood tests and sonography during the ANC check-ups. The proportion of **pregnant women and lactating women who received at least four services was found to be 100 percent.** All the women of reproductive age should be brought under the purview of ANC checks-ups and related services during their pregnancy as it contributes to overall health and well-being of mothers and their new-borns as well as serve as an important step towards achieving positive pregnancy outcomes.

(E). Place of receipt of services

All pregnant women and lactating women who reported to have received at least one ANC check-up were further asked about the place where they received these services from. They were encouraged to recollect all the places from where they had received ANC check-ups and related examinations. Figure 4.4 depicts various facilities which catered to their ANC check-ups. **Most of the respondents**

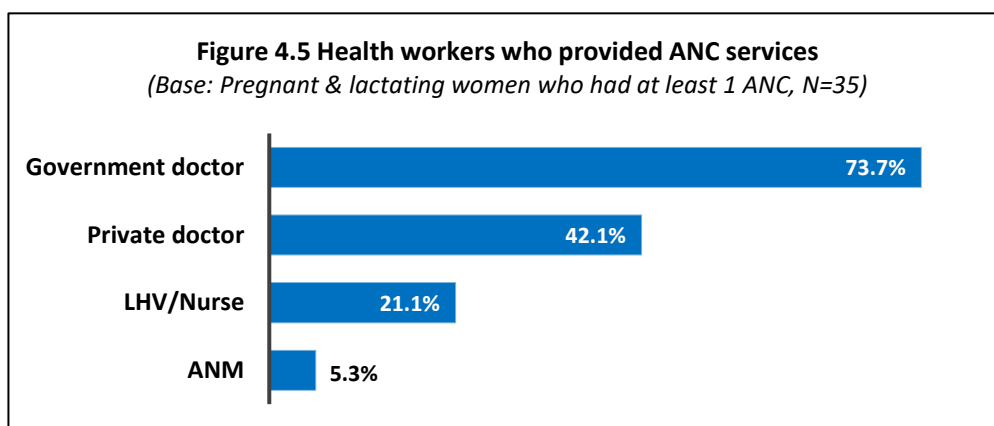


availed these services from government hospital (74%). Private clinic/nursing home and private hospital were also relied by considerable proportion of the respondents. Results do point out that few respondents went to multiple facilities to undertake their ANC check-ups. **Overall, dependence on public health facility was found to be higher as 94 percent of the respondents went to a public health facility for getting these services.** Another 54 percent were relied on private facilities for these services.

(F). Health worker who Provided ANC Services

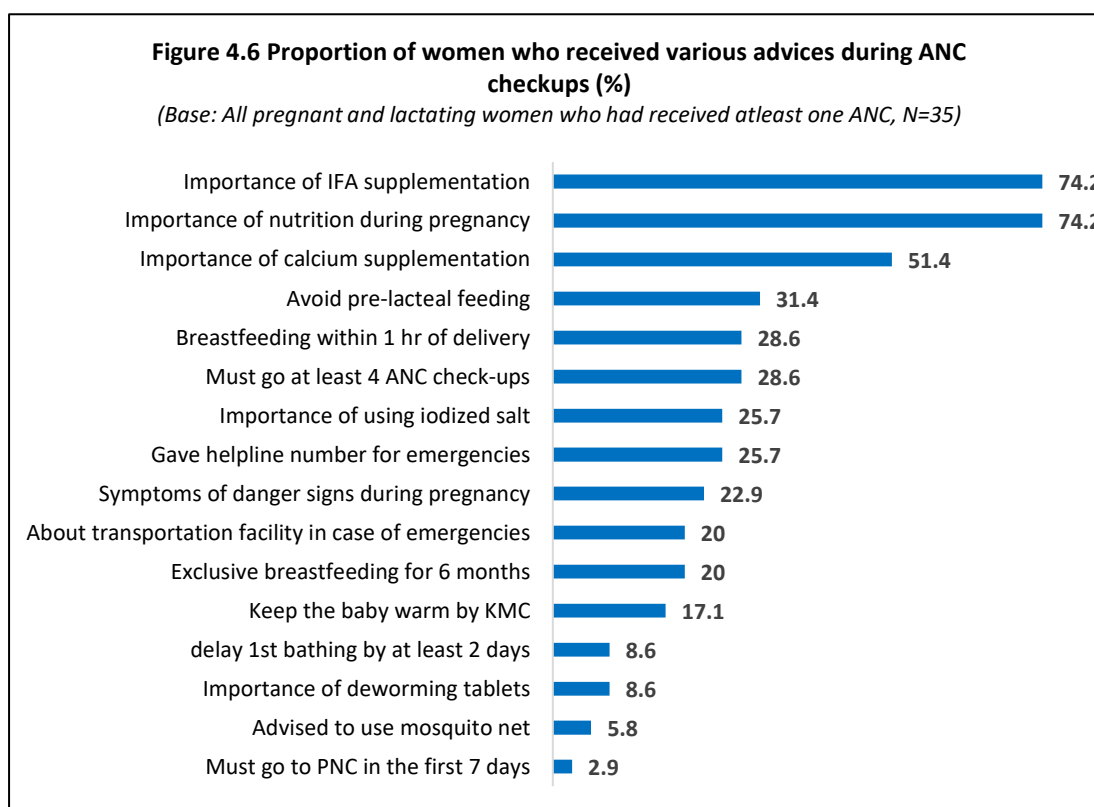
Subsequently, pregnant and lactating women were asked the health worker who provided these services. Higher reliance on public facilities for ANC check-ups was further reflected through the kind of health workers who delivered such services to the women. About **three-fourths of these respondents said they received the ANC services from a**

government doctor (74%). Others service providers were private doctor (42%), LHV or Nurse (21%) and ANM (5%).



(G). Advises received during ANC check-ups

In addition to various services, ANC check-ups are a platform for pregnant women to avail information regarding various aspects of the pregnancy like the type of care that the women should receive, birth preparedness, immediate new-born care and other recommended practices that should be followed during pregnancy and post-partum. Service providers are expected to deliver these vital details to pregnant women during each antenatal visit.





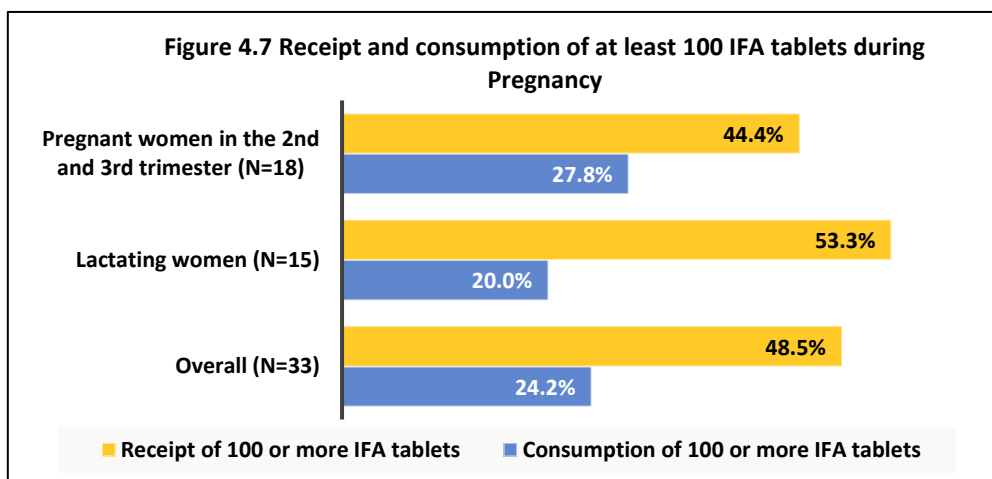
As the effectiveness of counselling lies in the ability of recipient to recall the messages, the pregnant and lactating women who received at least one ANC were particularly asked to recount the types of advices that they received from the service providers at the time of receiving antenatal check-ups. Figure 4.6 presents the findings obtained from this query.

As shown in figure 4.6, majority of the women were informed about the importance of IFA supplementation (74%), nutrition (74%) and calcium supplementation (51%) during pregnancy. Other important advices they received were to avoid pre-lacteal feeding (31%), to breastfeed immediately within one hour of delivery (29%) and the importance of 4 ANC visits (29%). Very few of them were advised on PNC visits (3%), importance of mosquito nets (6%) and deworming tablets (9%). This is in line with the very low proportion of women who affirmed consumption of deworming tablets (6%) during pregnancy (figure 4.10). Overall, type of messages recalled by the respondents indicate that there exists a need to improve the quality of counselling sessions as part of ANC and thereby improve the awareness level of women of reproductive age regarding the integral aspects of maternal and child health and nutrition.

4.2. IFA SUPPLEMENTATION DURING PREGNANCY

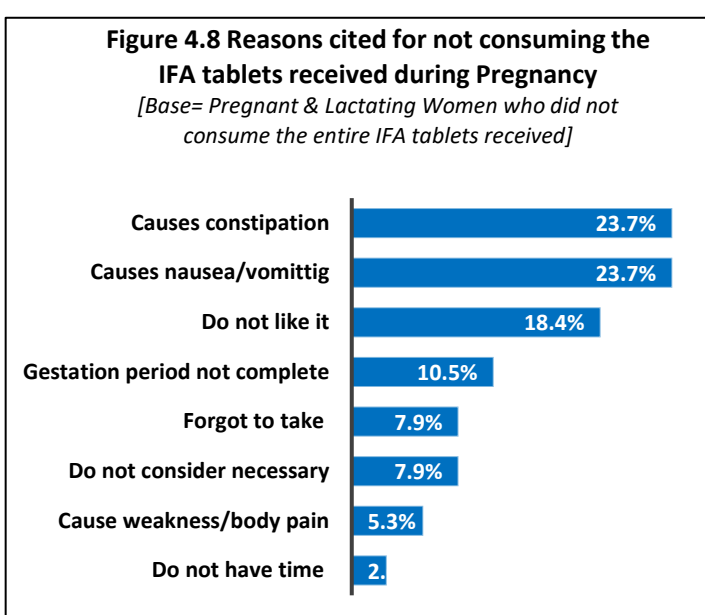
Pregnant women require additional iron and folic acid to meet the nutritional needs of their own body as well as of developing foetus. Iron and folic acid deficiency induced anaemia during pregnancy can have negative impacts on maternal and foetal health including maternal fatigue, puerperal sepsis, low birth weight and pre-term delivery. Department of Health and Family Welfare, Government of India, recommends IFA supplementation (100mg elemental iron & 500 mg folic acid) every day for at least 100 days during pregnancy.

All pregnant women and all lactating women were queried about receipt and consumption of iron and folic acid tablets during pregnancy. **A substantial proportion of 83% pregnant women and 93% lactating women had received iron tablets during their pregnancy term.** Out of these women who received any number of IFA tablets, everyone consumed some tablets.



For analysis of receipt and consumption of 100 or more IFA, pregnant women in the first trimester are omitted. Although around half of pregnant women in 2nd and 3rd trimester (44%) and half of all lactating women (53%) had received 100 or more IFA tablets, the proportion who consumed these tablets was very low. **Only a little more than one-fourth of these pregnant women (28%) and one-fifth of lactating women (20%) had consumed 100 or more of IFA tablets during pregnancy. On an average respondents consumed 94 IFA tablets during pregnancy.** Overall, gap between receipt and consumption of a minimum of 100 IFA tablets stood at 24 percentage points. Results do point out that more than gaps in supply-side chain, adherence to consumption of recommended levels of iron supplementation is an integral aspect that requires support in the study area.

The respondent women, who reported to have missed out on consuming all the tablets that they received, were further probed about the reasons why they did not consume all the tablets. Open-ended, unprompted, multiple responses were elicited in this have been depicted in figure 4.8.



Experience of side effects like constipation (24%), and nausea/vomiting (24%) formed the prominent reasons for sub-optimal consumption. 18% expressed that they do not like to consume the tablets. One-tenth of the pregnant women did not consume all the IFA tablets as their gestation period is not complete. Considering the importance of IFA tablet intake during pregnancy, this is a critical area to be intervened.

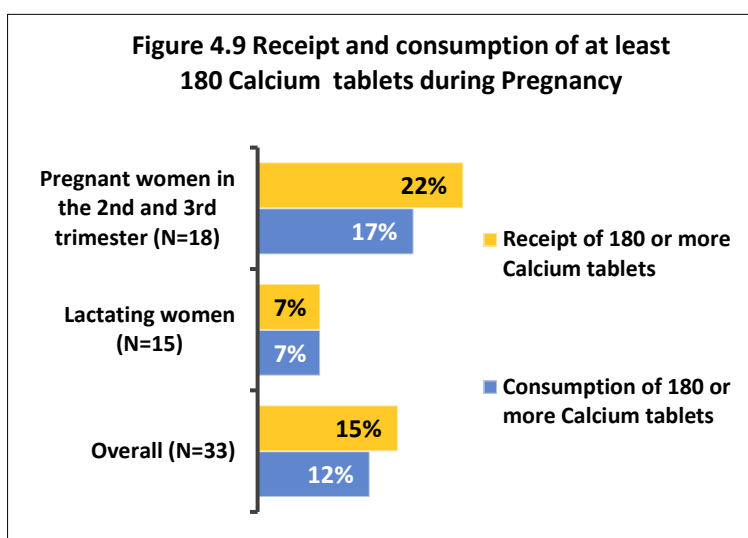
4.3. CONSUMPTION OF CALCIUM TABLETS DURING PREGNANCY

According to WHO, hypertensive disorders like pre-eclampsia and eclampsia are among the main causes of maternal mortality and pre-term births? Calcium supplementation during pregnancy improves calcium uptake and consequently reduces the risk of hypertensive disorders. Daily intake of 1.5g to 2.0g of elemental calcium is recommended.

All pregnant and lactating women were inquired about their calcium tablets receipt and intake during pregnancy. **17 out of 23 pregnant women and 12 out of 15 lactating women had**

received calcium tablets during pregnancy. Number of calcium tablets received by this lot ranged from 10 to 360 tablets. As regards the calcium intake, 70 percent pregnant women and 67 percent lactating women in the study sample had taken calcium supplementation during pregnancy. **The average number of calcium tables consumed by pregnant women and lactating women were 88 and 61 respectively.**

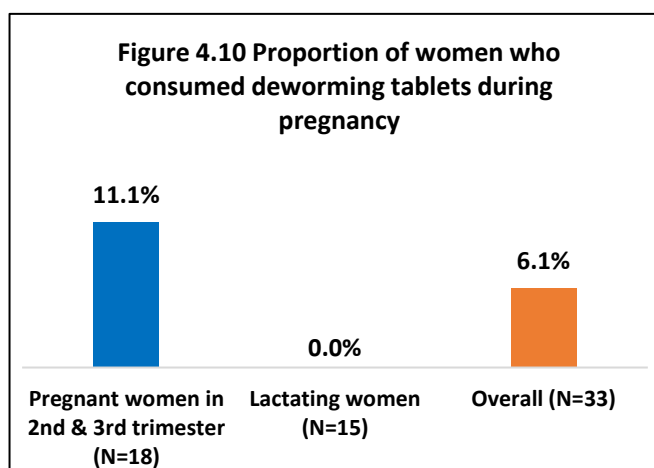
As per the directives issued by the Government of India in 2015-16, every pregnant woman should be given 2 Calcium tablets per day for 180 days starting from the second trimester of her pregnancy up to delivery and further for 180 days post-delivery. Overall, **only 15% of the respondents received at least half (180 tablets) of the**



recommended quantity of calcium supplementation. Nevertheless, extent of gap between receipt and consumption levels reported in case of IFA supplementation is not in calcium supplementation levels. Just **12%** of pregnant (in 2nd & 3rd trimester) and lactating women **consumed a minimum of 180 tablets during pregnancy.** Relatively higher share of pregnant women received desirable quantity of calcium tablets as compared to lactating women. Current level of consumption of calcium tablets during pregnancy is far behind the recommended norms and therefore requires added focus in future interventions.

4.4. CONSUMPTION OF DEWORMING TABLETS DURING PREGNANCY

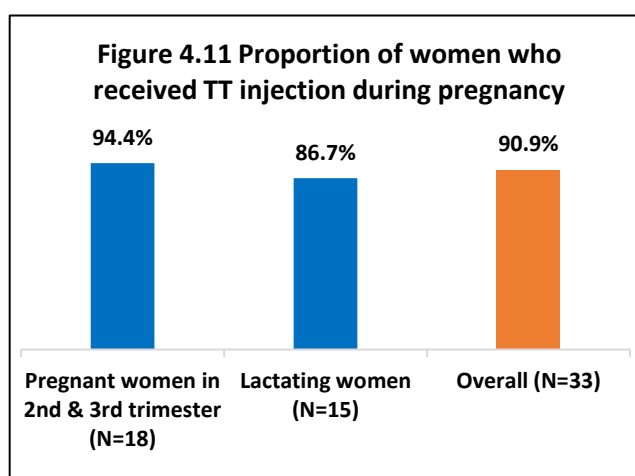
Women living in economically backward conditions, are prone to soil-transmitted helminth infections caused by parasites (or worms) like roundworm, whipworm, and hookworm. These parasitic infections can lead to internal bleeding, intestinal obstruction and impairment of digestion and absorption. Hence, preventive



chemotherapy of single dose albendazole or mebendazole is recommended for pregnant women. All pregnant women except for the ones in 1st trimester and all lactating women were asked to recall consumption of deworming tablets during pregnancy. **Only a meagre proportion of 11 percent pregnant women had consumed deworming tablets. None of the lactating women had consumed them.** Health educations and other interventions to increase the knowledge about and intake of deworming tablets are suggested for these respondents.

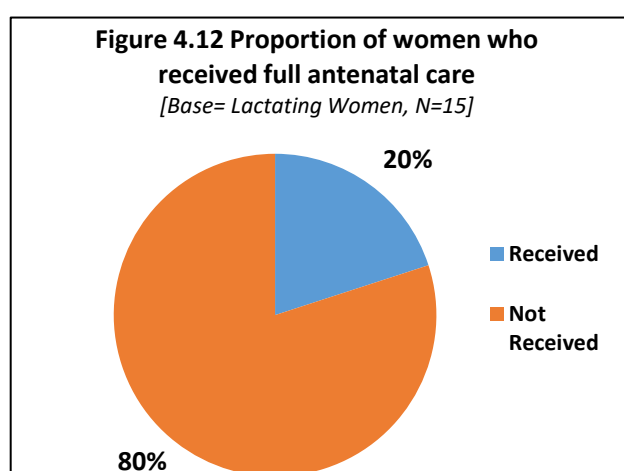
4.5. RECEIPT OF TETANUS TOXOID INJECTION DURING PREGNANCY

WHO recommends giving tetanus toxoid vaccination to pregnant women to protect them from tetanus and to protect the new-born from neonatal tetanus. When pregnant women in 2nd and 3rd trimester and lactating women were asked about their vaccination status, an overwhelming proportion of **90 percent of these women said they had received TT injection during pregnancy.** Half of these respondents received 2 doses of TT injections during their pregnancy.



4.6. RECEIPT OF FULL ANTENATAL CARE

National Family Health Survey of India defines 'full antenatal care' as proportion of women who received at least four antenatal visits, at least one tetanus toxoid (TT) injection and iron folic acid tablets or syrup taken for 100 or more days. For calculating this composite indicator, responses of pregnant women and lactating women on queries related to the no. of ANC check-ups they received, no. of IFA

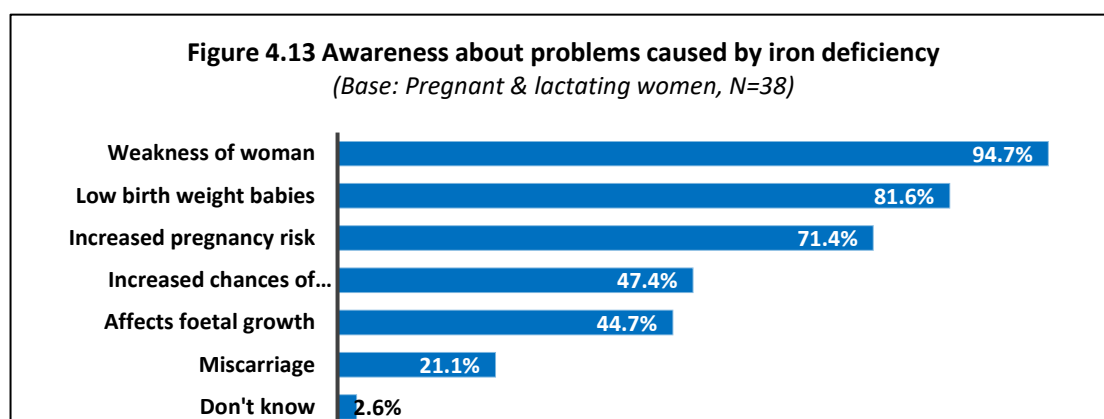


tablets they consumed and receipt of TT injections during their pregnancy term were taken into account. The data from the study showed a **very alarmingly low proportion of women who received completed ANC.** Only 3 out of 15 lactating women, which is **just 20%, had availed full ANC care.** Although lactating women who received at least four ANC check-ups and at least one TT injection were high in this sample, the composite total reduced because of low levels of

consumption of at least 100 IFA tablets, suggesting an urgent intervention focus to enhance IFA supplementation awareness and practices among the mothers in the study area.

4.7. AWARENESS ABOUT PROBLEMS CAUSED BY IRON DEFICIENCY

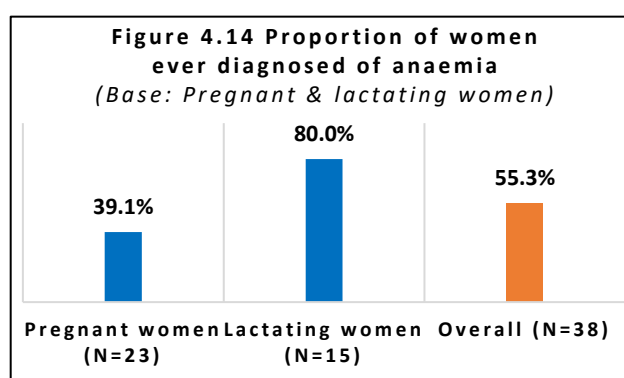
All pregnant and lactating women were inquired about their awareness about problems caused by iron deficiency. As evidenced from figure 4.13, awareness about common issues of iron deficiency was found to be high in this study population.



Almost all women (95%) pointed out the issue of fatigue in women as an aftermath of iron deficiency. And four-fifths (82%) and one-fifth (21%) of all these women were also aware about low birth weight babies and miscarriage respectively. Around half of them (47%) cited iron deficiency will lead to higher chances of infection. **Overall, all the surveyed lactating women and 70 percent pregnant women were knowledgeable about 3 or more issues caused by iron deficiency.** Only about 3 percent of these respondents were not aware about any problems.

4.8. WOMEN EVER DIAGNOSED OF ANAEMIA

All pregnant and lactating women were enquired about ever being diagnosed as anaemic or heard any health professional categorising them as anaemic. The study found two-fifths (39%) of all pregnant women and four-fifths (80%) of all lactating women were diagnosed as anaemic at some point in their life. **This indicator draws**



attention to high awareness but the low IFA consumption rate in this population of women, implying the need for significant behavioural change intervention in this regard.

INFANT AND YOUNG CHILDREN FEEDING PRACTICES



Infant and Young Children Nutrition is an integral part of the SDG Goal no.3.2 which aims to reduce the under-5 mortality rate and hence, improving IYCN practices in children is critical to overall child survival and development. World Health Organisation (WHO) and Department of Health and Family welfare, Government of India, have put forward many indicators to assess IYCN practices of the community. This section attempts to understand the current and past infant and young children feeding practices adopted by lactating women and mothers of children aged 6 – 59 months. The indicators for this chapter were imbibed from WHO and NFHS (National family Health Survey) guidelines for the assessment of IYCN practices of the respondents.

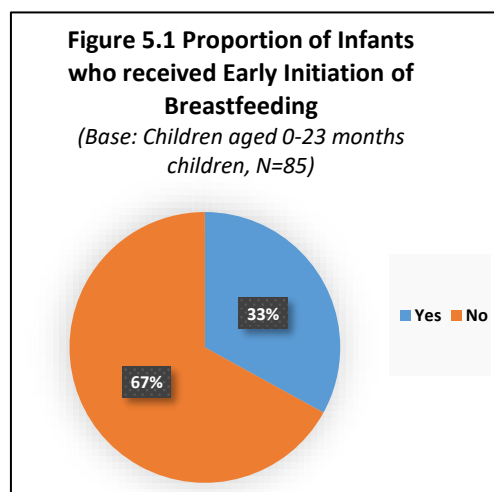
The structured questionnaire for the baseline survey had separate sections for mothers of children in different age groups. **Lactating women (mothers of 0-5 months' children) and mothers of children aged 6-59 months were asked about the infant feeding practises** like when was the child put to breast after birth and for how long the baby was exclusively fed breast milk; and mothers of children aged 6-23 months were inquired about the feed and meals given to the child on the previous day to elicit information on these IYCN indicators. Furthermore, various awareness indicators to assess the women's knowledge on infant feeding practices, were also included in the questionnaire. The sections ahead depict study findings with regard to various aspects of infant and young child feeding practices in the study area.

5.1. EARLY INITIATION OF BREASTFEEDING

Definition- Early initiation of breast feeding is the proportion of children aged 0-59 months who were put to breast within one hour of birth.

Breastfeeding contributes to saving children's lives, and there is evidence that delayed initiation of breastfeeding increases their risk for mortality (WHO). Mothers of 0 – 5 months old children (lactating women) and 6 – 59 months old children (mothers) were asked if they ever breastfed their youngest child who was the sampled child for the survey. Following this, women who had ever breastfed were further probed to recall when they put their infant to breast after delivery.

Even though the proportion of women ever breastfed was very high in the sample (99%), only one-third of 0-23 months old infants were initiated with early breastfeeding (Figure 5.1). Further lactating women who did not start breastfeeding within an hour of delivery were asked about the reasons that hindered them from doing so. To this, almost two-thirds of them stated that their new-born was kept away from them after delivery and hence, they could not start breastfeeding on time. Other medical issues restricted another 27% of them in initiating breast feeding within an hour of delivery and few of them (7%) delayed based on the advice of the doctor.



Interestingly, **more than four-fifths of these women (86%) had heard some messages about IYCN practices** suggesting there is no exigency to focus on creating awareness, instead efforts shall be made in stimulating the practice in this regard. **When asked about the regional practice of feeding something sweet to the infant before initiating breastfeeding, 17 percent women believed that it is a right thing to do.** The same question was asked to elderly care takers of children and **85 percent of them said nothing but breastmilk should be fed in the initial days.** This indicates there is a need to exert focussed efforts in inculcating behavioural changes in the community.

5.2. EXCLUSIVE BREASTFEEDING

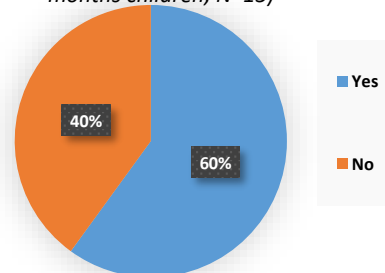
Definition- Exclusive breastfeeding is the proportion of infants under 6 months who were fed only breast milk with no additional food or drink, not even water for the first 6 months of life.

Exclusive breastfeeding for children aged 0-5 months provides sufficient energy and nutrition for growth and overall development of the child. Breastmilk is the sole source of naturally acquired passive immunity and has an impact on sensory and cognitive development of the child. It is also an indicator of maternal health. For the purpose of this study, lactating women with children aged 0-5 months were asked whether they were breastfed the day before the survey. The children were considered exclusively breastfed if they had been fed with only mother's milk and not being fed with anything else. The results thus obtained are presented in figure 5.2. **The survey found that 60 percent of infants aged 0-5 months were exclusively breastfed.**

All respondents of the survey including pregnant women, lactating women and mothers were also asked about the optimal duration an infant should be exclusively breastfed. A very high proportion of **91 percent pregnant women, 93 percent lactating women and 92 percent mothers deemed 6 months to be an appropriate time period for exclusive breastfeeding.** Women of reproductive age in the study area are very well aware about the desired duration of exclusive breastfeeding. Results show that they need further hand holding in translating the knowledge into practice which will go long way in enhancing the new-born health and nutritional status.

Figure 5.2 Proportion of Infants who were fed Exclusively with Breastmilk

(Base: Lactating women with 0-5 months children, N=15)



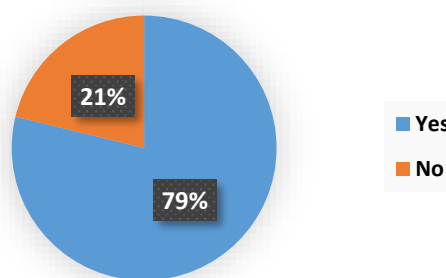
5.3. AGE APPROPRIATE BREASTFEEDING

Definition: Age-appropriate breastfeeding is defined as the proportion of infants 0–5 months of age who received only breast milk during the previous day and children 6–23 months of age who received breast milk, as well as solid, semi-solid or soft foods, during the previous day

To meet the nutritional requirements as per the age of the child, appropriate strategy of breastfeeding practice has to be adopted. As mentioned above for the other IYCN indicators, age appropriate breastfeeding practices also have the scope of reducing under-five mortalities. As per the protocol of WHO and UNICEF, infants are considered breastfed in age-appropriate manner, if they are exclusively breastfed up to the completion of 5 months of age and then given breastmilk along with adequate supplementation of solid, semi-solid or soft food items. Based on this definition, overall, the survey found a very high proportion (79%) of children aged 0 – 23 months who are breastfed appropriately for their age.

Figure 5.3 Proportion of Children who are Appropriately Breastfed

(Base: Children aged 0-23 months, N=85)



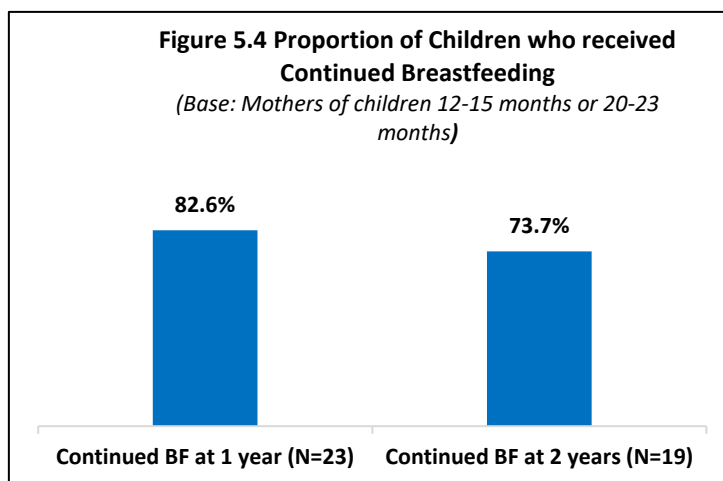
5.4. CONTINUATION OF BREASTFEEDING

Definition: a) **Continued breastfeeding at 1 year of life** is defined as the proportion of children 12–15 months of age who are fed breast milk.

b) Continued breastfeeding at 2 years of life: The proportion of children 20–23 months of age who are fed breast milk.

Continued or extended breastfeeding up to 1 or 2 years provides longer-term health benefits for the mother and the child. Evidences show that continued breastfeeding can prevent certain infections like diarrhoea in children.

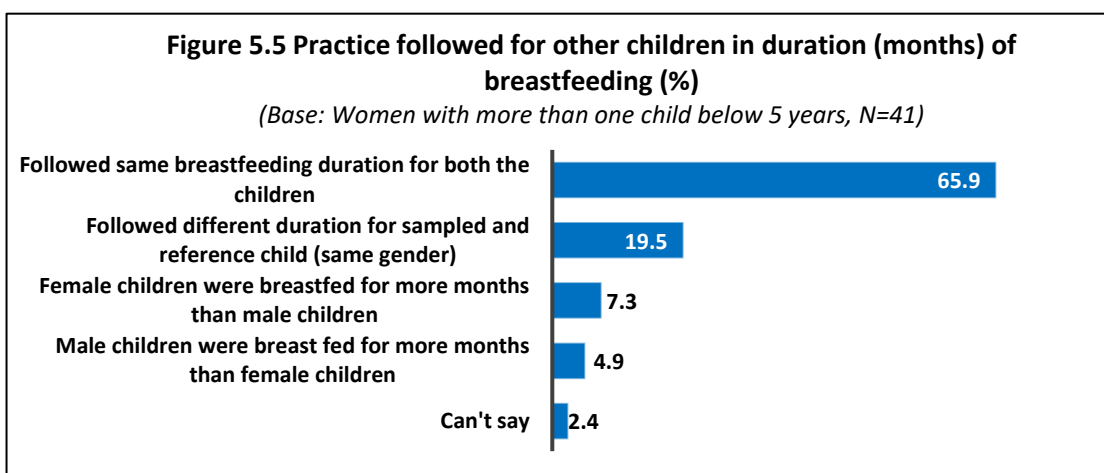
All mothers were asked about foods given to the child the previous day and the frequency of feeding each food item. Figure 5.4 depicts the proportion of mothers who fed their children of 6-23 months with breast milk along with other liquids, semi-solid or solid food items on the day before the survey.



The study deduced that

extended breastfeeding at 1 year of age (83%) was more common than continued breastfeeding at 2 years (74%).

Women with more than one child (N=41) under the age of five were asked about the demographic details of the other children also. Child closer to the age of the sampled child is selected as the reference child. These women were inquired about their breastfeeding practice in terms of continuation of breastfeeding they had adopted for the reference child to examine whether any gender differences exist in prolonging breastfeeding among their children.

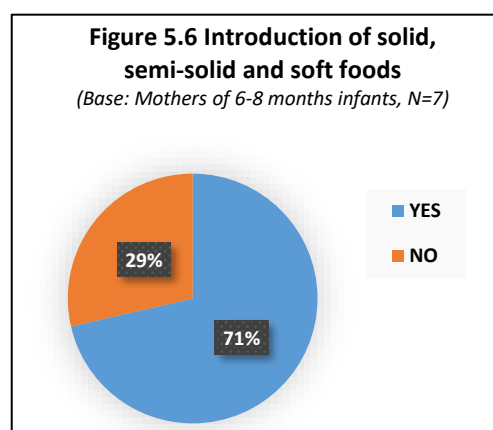


In figure 5.5, while about two-thirds women stated they had breastfed the other child also for the same duration as that of the youngest child, 7 percent said female children (n=3) and 5 percent said male children (n=2) were breastfed for more no. of months than the other. Another two-fifths of these mothers said they continued breastfeeding differently for sampled child and reference child owing to other medical, appetite or nutritional requirements. However, these set of infants were of the same gender. Altogether, survey findings reflected **no evident gender bias in the breast feeding practices undertaken by mothers in the study area.**

5.5. INTRODUCTION OF SOLID, SEMI-SOLID AND SOFT FOODS

Definition- Introduction of complementary foods is defined as the proportion of infants aged 6–8 months who receive solid, semisolid or soft foods.

WHO recommends 6 months as the appropriate time for introduction of solid, semi-solid and soft foods to infants, because breast milk alone won't meet the nutritional requirements of the growing child. Mothers and elderly caretakers were asked about the right age of introduction of complementary feeds and were also inquired about what the baby was fed the previous day. **An overwhelming proportion of 94 percent mothers and 93 percent elderly caretakers said 6 months**

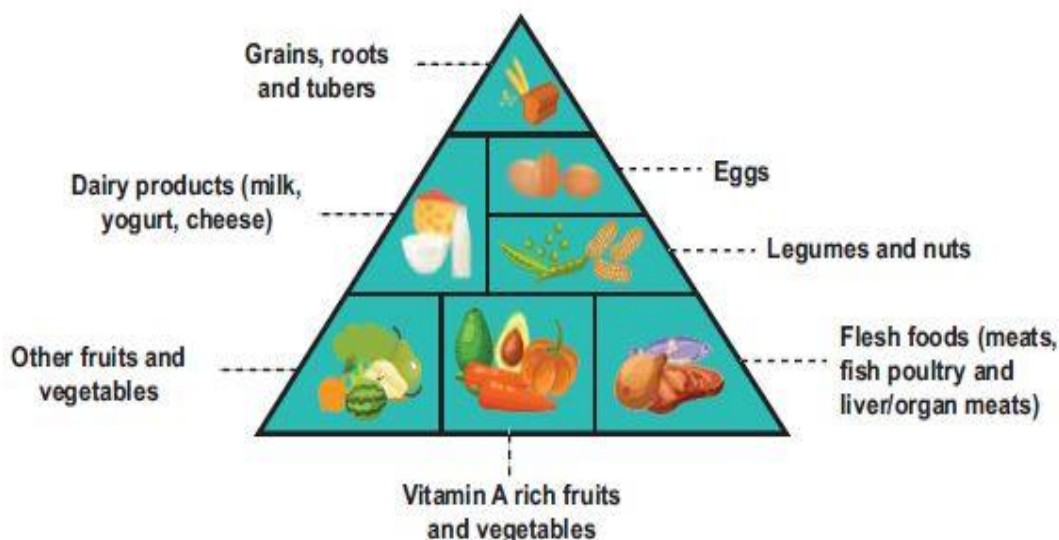


is the appropriate age to introduce complementary foods. More than two-thirds of mothers (71%) with infants aged 6-8 months had fed their children solid, semi-solid or soft foods on the previous day of the survey. When mothers with more than one child below five years of age were asked about their practice regarding the time of introduction of complementary foods with the other child, **91 percent said that all their children were introduced complementary foods at the same time.** A small proportion of 7 percent mothers who followed different approach were based on the specific nutritional requirement of children. These set of mothers had same gender children. Findings show that the mothers in the study area did not depict any gendered bias between their kids in this aspect.

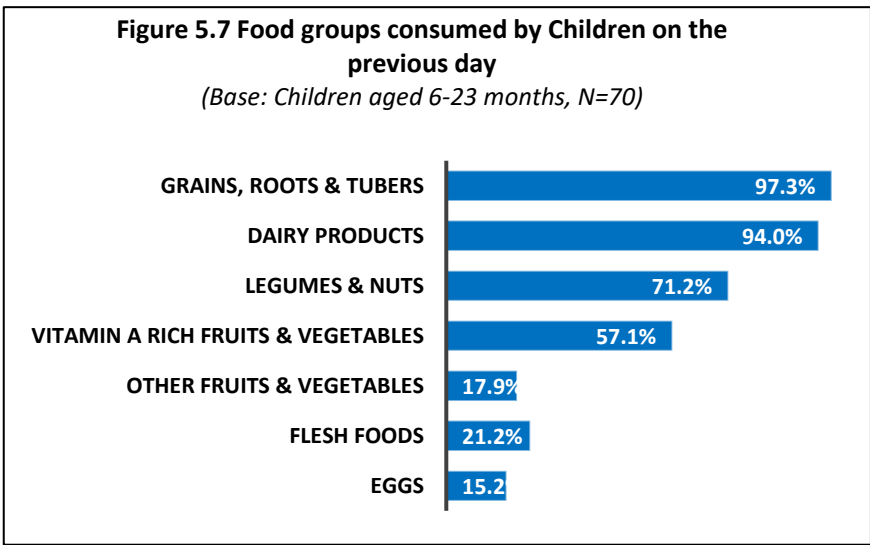
5.6. MINIMUM DIETARY DIVERSITY

Definition- Minimum Dietary Diversity (MDD) is the proportion of children 6–23 months of age who receive foods from 4 or more food groups.

Dietary diversity is a proxy for nutrient adequacy of the diet. With the introduction of semi-solid food group, the child should be introduced to all the dietary food groups so that they can get the appropriate amount of nutrition. There are 7 important food groups that the child should consume as recommended by WHO-UNICEF guidelines (2008)² in addition to breast milk. These are depicted in the adjacent figure.



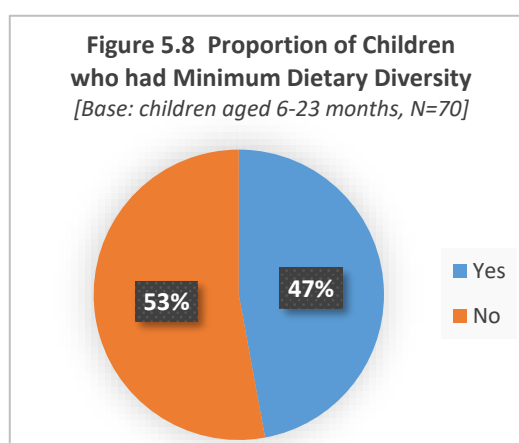
In order to understand the diet composition of infants aged 6-23 months, the mothers who affirmed that their child had a typical previous day were then asked about all types of foods that their child ate previous day



during the day or at night either separately or combined with other foods. The interviewers were given a comprehensive list of all types of foods and they were required to inquire into the consumption of each type of food. While the mothers offered a description, the investigators were required to mark the food groups that were covered by the specific food. Figure 5.7 depicts the proportion of children who consumed various food items belonging to the 7 groups.

² WHO (2008): Indicators for assessing infant and young child feeding practices Part 1 & 2

Proportion of children who were fed grains, roots, tubers (97%) and dairy products (94%) was very high compared to non-vegetarian food items like eggs (15%) and flesh foods (21%). Results suggest that children’s diet was majorly vegetarian and grains, roots and tubers and dairy products comprised the major part of their meals.

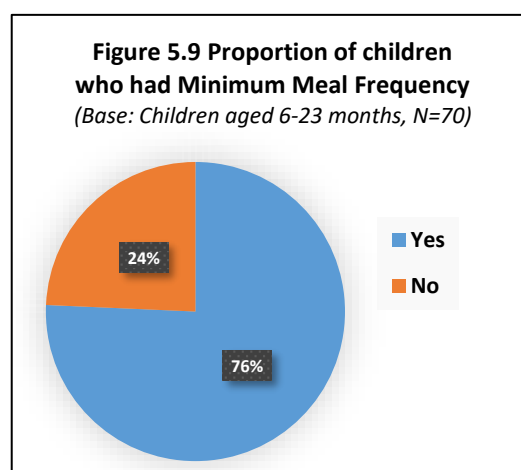


Based on the responses received, minimum dietary diversity (MDD) of children has been computed. MDD is a significant indicator that provides insights into the nutritional diversity of children aged 6-23 months. Consumption of at least 4 groups among these 7 food groups is the cut-off set for this indicator. **Less than half of the children (47%) aged 6-23 months had an adequately diverse diet containing four or more food groups.** These findings are pointing to the fact that the current infant dietary practices among mothers in the community are far from desirable and extensive interventions will be required to bring about a positive change in this regard.

5.7. MINIMUM MEAL FREQUENCY

Definition: Minimum Meal Frequency (MMF) Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

Along with ensuring that the child is eating the appropriate kind of food, it is essential that the child has the appropriate number of meals in a day. Minimum meal frequency indicator is important to ascertain sufficient the energy/calorie intake in children aged 6 – 23 months from foods other than breastmilk. Mothers of children aged 6 – 23 months were enquired about the number of times their child ate semi-solid or solid foods ((including snacks) the previous day. Based on the responses



received, the Minimum Meal Frequency has been calculated as a combination of proportion of breastfed children between 6-23 months who received 3 or more meals and proportion of

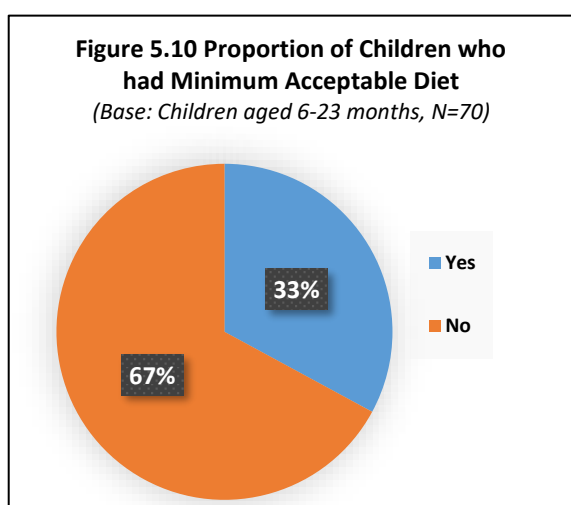
non-breastfed children between 6-23 months who received 4 or more meals during the previous day.

As evidenced in figure 5.9, around **three-fourths (76%)** of the children belonging to this age group had the recommended minimum meal frequency.

5.8. MINIMUM ACCEPTABLE DIET

Definition: Minimum Acceptable Meal (MAD) is the proportion of breastfed children aged 6–23 months who had at least the MDD and the MMF during the previous day.

The relationship between sub-optimal feeding practices and malnutrition in children is well-established. Minimum Acceptable Diet is a composite indicator that captures multiple dimensions of food intake in children aged 6 – 23 months to assess their nutritional status. Children aged 6-23 months who had minimum meal frequency and minimum dietary diversity on the previous day forms the numeral for this indicator. Though proportions of children who had MDD and MMF was



comparatively high, **only one-third of the children aged 6-23 months had minimum acceptable diet** the previous day of the survey, implying a critical area to be intervened. Since minimum acceptable diet provides a comprehensive understanding about the quality of the diet offered to infants in their crucial stages of life, lower level of its prevalence is further reiterating the fact that the current dietary practices among mothers are far from desirable and extensive interventions will be required to bring about a positive change in this regard.

5.9. SUPPORT RECEIVED BY MOTHERS ON IYCN

Health workers and other community members organize meetings and training for mothers to come together to learn about infant and young child feeding practices. This was also reinforced during in-depth interviews with ASHAs, ANM and AWWs. This section tries to understand the support received by mothers on IYCN practices. Mothers and lactating women were encouraged to recall the number of sessions/trainings they attended or the home visits conducted by frontline workers and the advices they received during these meetings.

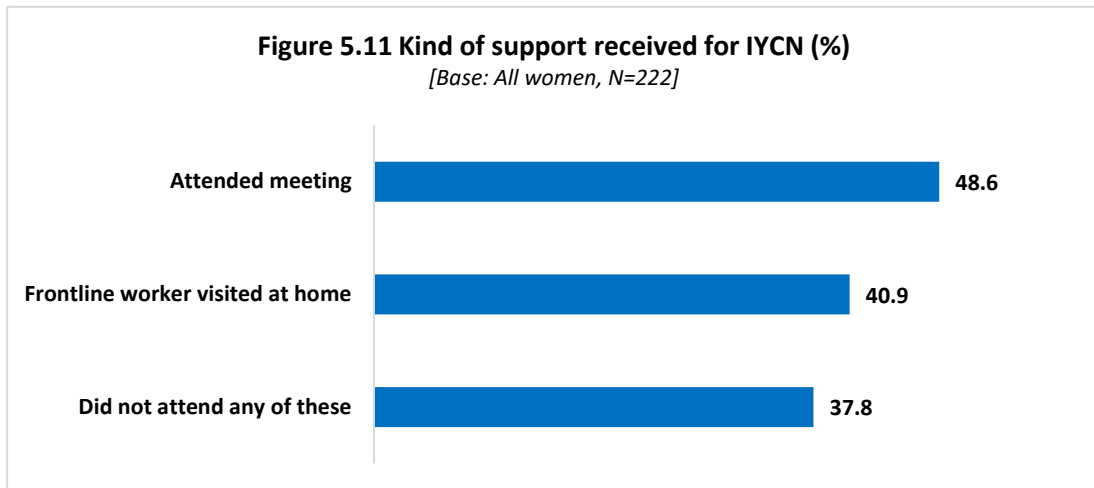
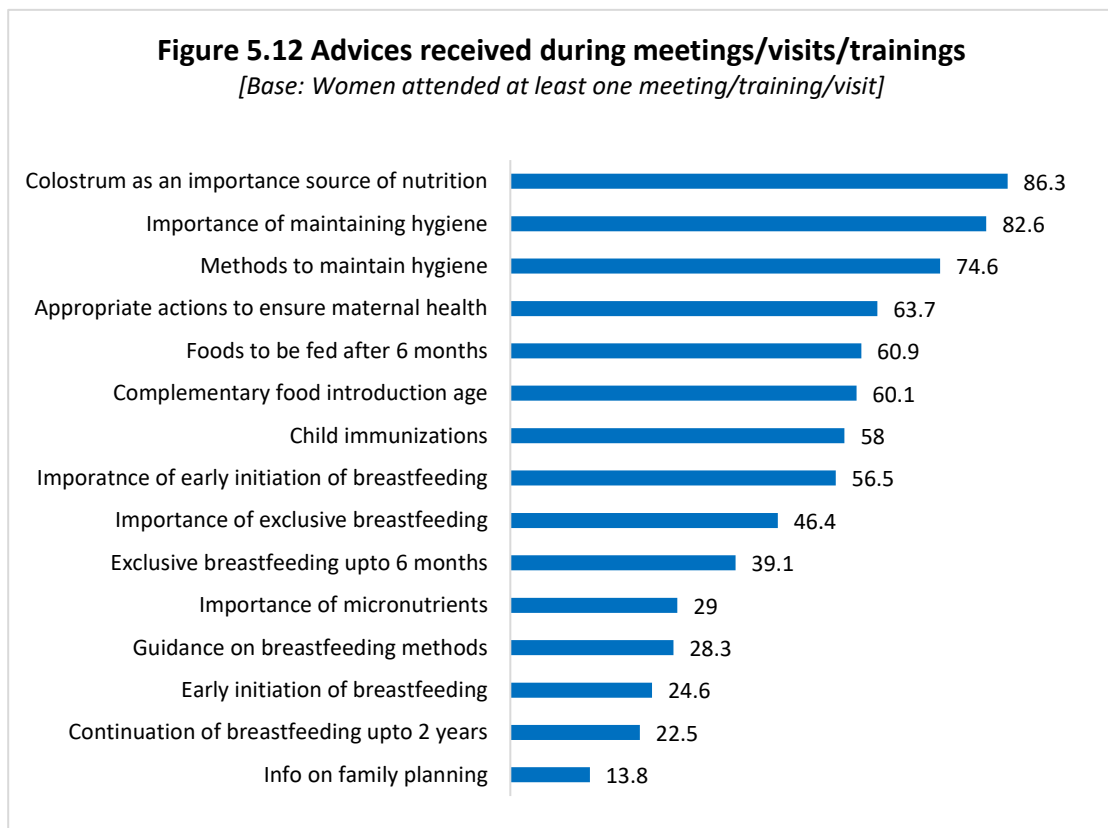


Figure 5.11 shows that majority of the women received support or guidance related to IYCN through multiple ways. Close to half of the respondents (49%) had attended any session on IYCN and two-fifth of them were visited by a frontline worker at home to advise on various feeding practices. However, more than one-third of these women did not receive any guidance as they neither attended an such sessions or trainings nor frontline worker visited them. The number of sessions and home visits ranged from 1 to 10 with the average being 1 and 3 for sessions and visits respectively.





Respondents were also queried about the frontline worker who advised them on IYCN practices. A large proportion of women (86%) said it was Anganwadi worker who informed them about IYCN. Other frontline workers mentioned by the mothers were ASHAs (70%) and NGO worker (53%).

Subsequently, these women who attended at least one meeting/training or visited by frontline worker were queried about various advices they received during these sessions. Figure 5.12 tabulates all the different advices these women received. All most everyone were advised on the importance of colostrum (86%) and maintaining hygiene (83%). Around three-fifths were informed on appropriate actions to ensure maternal health (64), what all semisolid or solid foods that can be introduced after 6 months (61%), the right age of introduction of complementary feeding (60%), various vaccinations and the dosage required (58%). Advices like information on family planning and various methods of contraception (14%) was the least mentioned by the respondents.

MATERNAL & CHILD HEALTH AND NUTRITION

6

CHAPTER

Maternal and child health is an important public health affair to almost all the public health systems around the world. Evidence across the world show that increasing access to quality preconception (before pregnancy), prenatal (during pregnancy), and inter-conception (between pregnancies) care can lead to reduced risk of maternal and infant mortality and pregnancy-related complications. Moreover, healthy birth outcomes and early identification and treatment of developmental delays and disabilities and other health conditions among infants can prevent death or disability and enable children to reach their full potential. Maternal and child health interventions in the form of antenatal care, skilled attendance during delivery, postnatal care and family planning, growth monitoring and immunization interventions are among the most cost effective and lifesaving investments in public health. It is believed that if adequate care is offered to delivering mothers and their new-borns during these stages, it will eventually reduce maternal and child mortality to a significant extent. India also has many policies and programs that are implemented to improve the overall wellbeing of mothers and children. This section deals with some of the factors that can affect and shape maternal and child health that were explored as part of the baseline survey in the study area. Main focus of this chapter revolves around aspects of maternal nutrition and child immunization.

6.1 MATERNAL NUTRITION

Pregnant women, lactating women and women in reproductive age generally require nutrient dense food intake because of the physiological demands of pregnancy, lactation and menstruation. The amount of nutrient intake is directly proportional to self-health status, as well as growth and development of the foetus/infant. Outside of pregnancy and lactation, other than for iron, requirements for these women include a more nutrient-dense diet. In order to get a glimpse of the nutritional status of women of reproductive age in the slum area, the aspect of dietary diversity among the respondents of the current study was explored.

(A). Food Group Diversity among Women

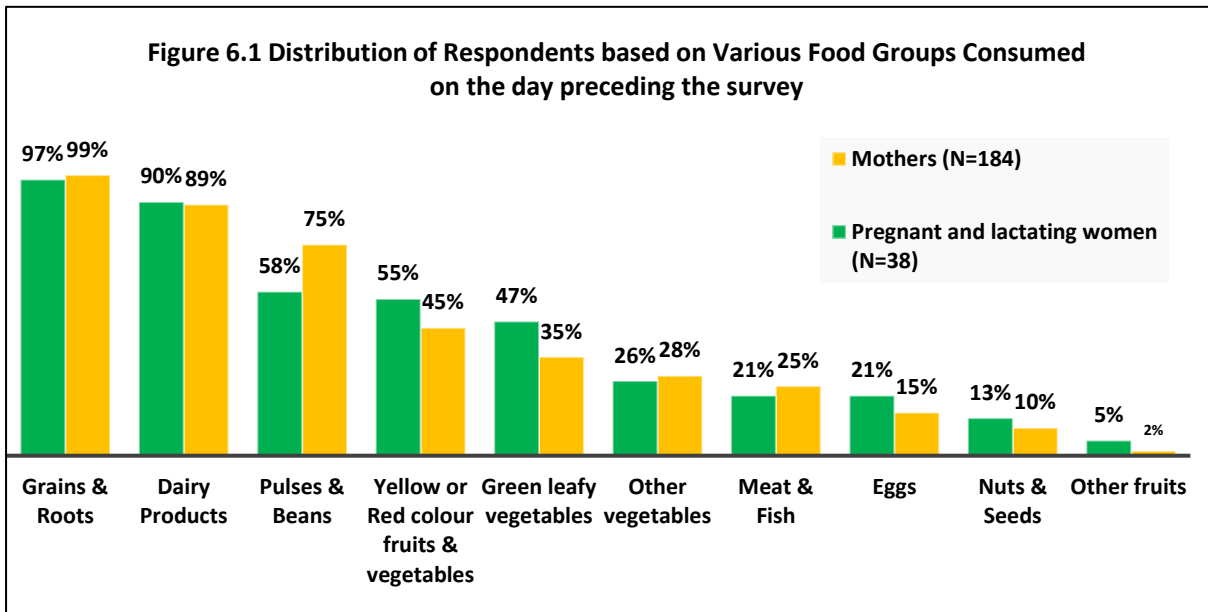
All respondent women were asked if the previous day was a nutritionally representative day. And women who had a typical day was asked to mention all the kinds of food (and their ingredients) they ate in the past 24 hours. The research investigators then grouped the ingredients of the food items mentioned by the respondents into 10 food categories which are mentioned in Table 6.1. Few women who mentioned the previous day not a



typical day for them were revisited on another day of the data collection to fill details about their food intake. All the respondents were thus made part of this dietary intake exploration.

GROUPS	COMPONENT ITEMS
Group 1	Chapatti, rice, noodles, porridge or any other product made of grains, corn, bajra Potato
Group 2	Beans, peas, pulses, lentils
Group 3	Nuts or seeds
Group 4	Paneer, milk or curd, yogurt, cheese or other milk products
Group 5	Any meat such as pork, lamb, goat, chicken or duck, fresh or dried fish, sea food
Group 6	Eggs
Group 7	Spinach, other dark green leafy vegetables
Group 8	Pumpkin, carrot, squash, etc. that are yellow or orange from inside, Ripe mango, papaya or any other fruit rich in vitamin A
Group 9	Any other vegetable
Group 10	Any other fruit

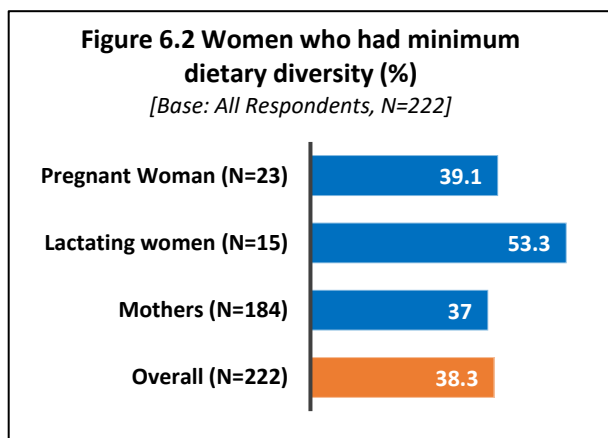
As evidenced from figure 6.1, consumption of (i) **Grains, roots & tubers** that include rice, chapatti, porridge etc. which are rich in carbohydrates (98%) and (ii) **Dairy products** that include Paneer, milk or curd, yogurt, cheese or other milk products which are rich in calcium (89%) were the **highest across both pregnant and lactating women respondents and mothers of children aged 6-59 months**. While three-fourths of mothers (75%) ate pulses and beans items, only 58% of pregnant and lactating women consumed it on the previous day. Vitamin-A rich fruits and vegetables were eaten by around half of lactating and pregnant women (55%) and mothers (45%). Important **sources of proteins** such as **nuts and seeds (10%), eggs (16%), and meat and fish (24%) were relatively less consumed** by the women as compared to other food items. In addition, other fruits was found as the least consumed group in both categories (5% in pregnant/lactating, 2% in mothers).



Type of food groups consumed by pregnant and lactating women and the mothers was almost similar. Overall consumption pattern reflected that respondents mostly followed a vegetarian diet. Consumption of non-vegetarian foods is also governed by the religious inclinations and economic status of the families. However, future programme interventions may consider emphasizing advantages of consuming such food groups and their nutritional content (at the same time, maintaining cultural and religious sensitivity) among women of reproductive age.

(B). Women with minimum dietary diversity (MDD-W)

The MDD-W is a dichotomous indicator based on consumption of a number of food groups the previous day or night captured through an “open-recall” method. **Women who have consumed 5 or more of the above mentioned food groups are said to have minimum dietary diversity.** Minimum dietary diversity represents the minimum nutritional

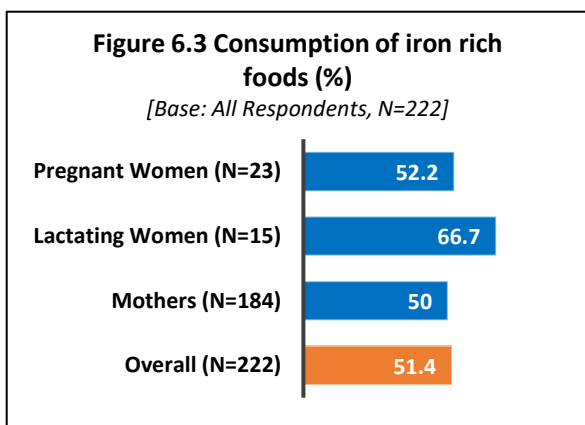


requirement necessary to meet her physical needs. In this survey, half of the lactating women (53%), around two-fifth of pregnant women (39%) and mothers (37%) had minimum dietary diversity. On the whole, **proportion of women in the reproductive age with minimum diet diversity was low, at 38%.** The results indicate the need to spread

awareness about importance of nutrient dense diet among the women members in the study area.

(C). Women who consumed iron rich foods

Consumption of iron rich foods ensure constant supply of iron required to meet metabolic, menstrual, pregnancy and lactating needs. From the food intake details of the previous day, **women who consumed food groups: Green leafy vegetables and flesh foods (meat and fish) are considered to have eaten iron rich foods the previous day.** Figure 6.3



illustrates results obtained in this regard. Lactating women depicted highest proportion (67%) who had iron-rich food items among the three categories. Overall, only **around half of these women consumed iron rich foods the previous day of survey.** Pregnant and lactating women were also probed for their awareness about foods that contain iron. More lactating women (47%) than pregnant women (22%) were aware about at least 2 or more foods that contain iron, explaining higher proportion of them consuming iron rich foods.

6.2 PREGNANCY RELATED PRACTICES

Physiological changes during pregnancy time can make it difficult to carry out routine activities. Even though moderate physical activities for 30 minutes in a day is recommended, high intensity activities can cause fall and abdominal trauma and hence are avoided. Similarly, pregnant women require additional nutrition and calories for optimal growth of the baby. A healthy diet is one that is based mainly on plant foods. Health of the pregnant women is directly linked to the health of the baby. In this section pregnant and lactating women were encouraged to recall the changes made in routine activities and diet.

(A). Changes in routine activities on account of pregnancy

Women during their pregnancy period are advised to make certain lifestyle changes to maintain their health and nutritional status as gestational period marks intense physical and psychological changes in their lives. In this regard, the study explored the kind of routine activities had some variations owing to pregnancy among the study population. All pregnant and lactating women were asked to recall the changes made to their routine



activities on account of their pregnancy. Other than a small proportion of 5 percent who did not make any changes to their routine, all others stated few activities that they have avoided or reoriented to suit their physical and psychological needs during pregnancy.

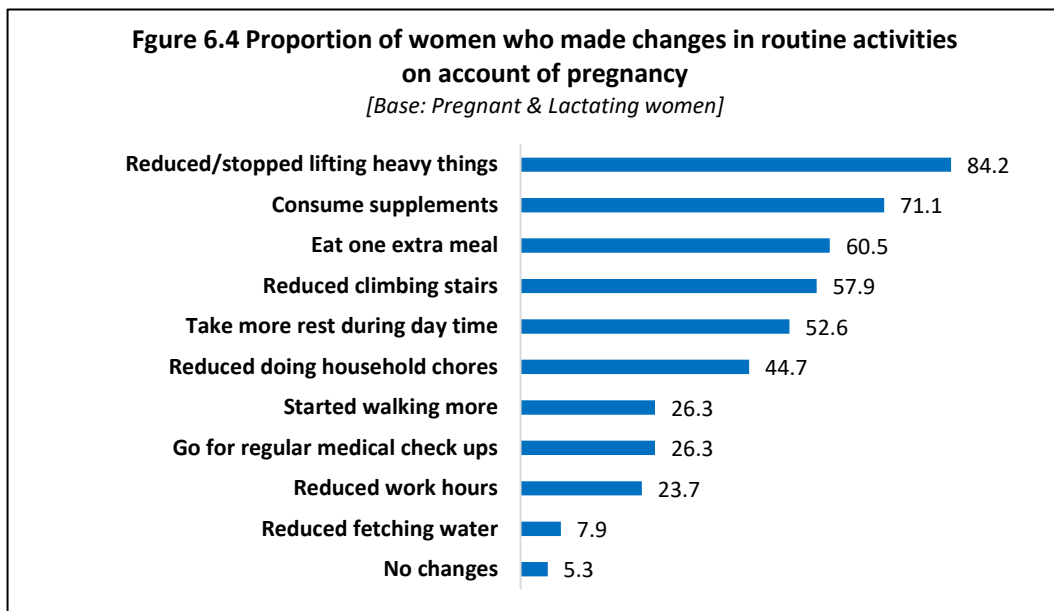


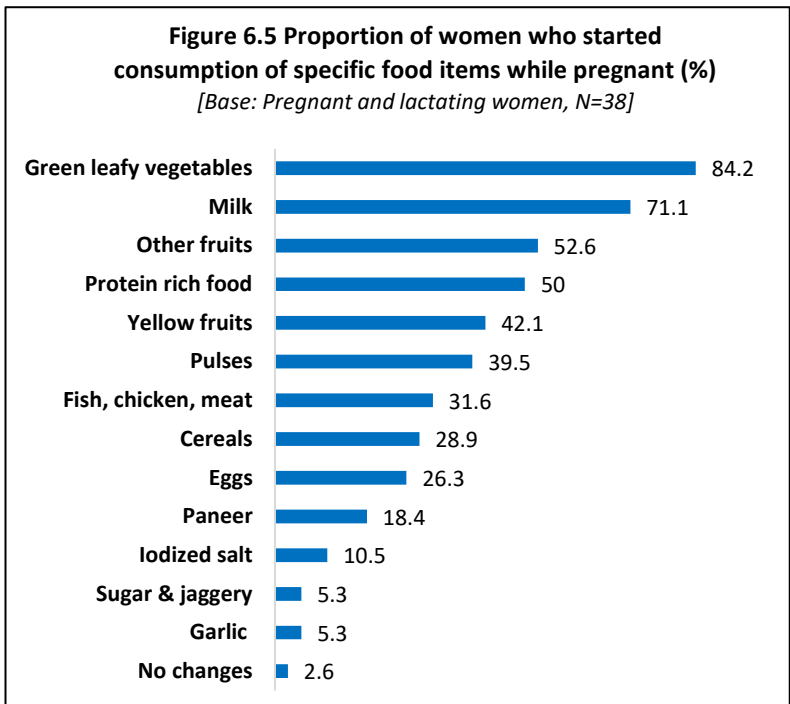
Figure 6.4 depicts findings obtained to the query on various routine activities undertaken by these women when they were pregnant. **A large majority (84%) of them reduced/avoided lifting things that are heavy. Considerable proportion of them made changes to their diet such as began consuming one extra meal (61%) and additional vitamin and mineral supplements (71%).** Around half of these respondents also said they take more rest during the day (53%) and reduced the time spend on household chores (45%). Overall, a marked reduction in engagement in physical activities that require more energy and efforts formed the predominant change that respondents had owing to pregnancy.

(B). Consumption of specific food items when pregnant

Acknowledging the additional nutritional requirements of pregnancy, women are expected to consume specific food items that are nutrient dense and may not usually be part of their normal diet during pregnancy and post-partum period. Service providers are supposed to share suggestions regarding such nutritional additions to their diet during ANC check-up counselling sessions and during home visits. In this context, all currently pregnant and lactating women were probed about the additions they made to their diet on account of their pregnancy. Figure 6.5 shows a wide variety of foods items were added to the diet of these women.

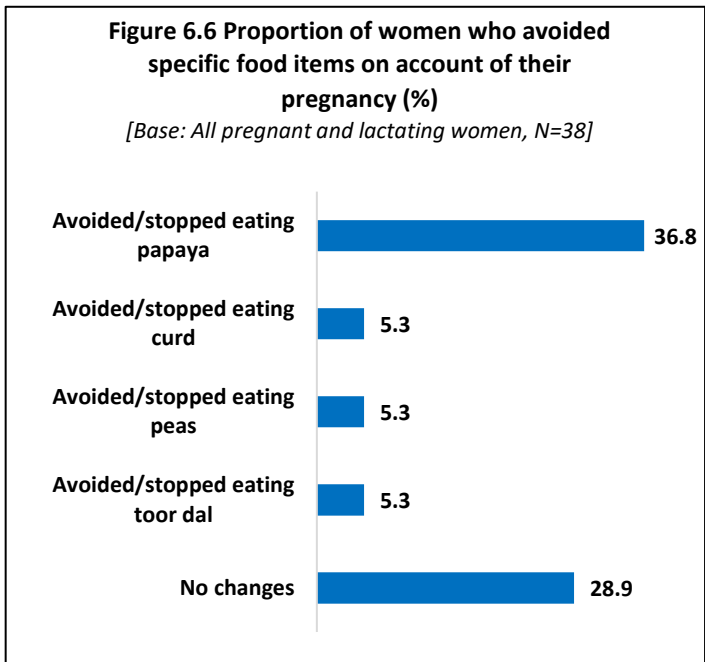


Only a small proportion did not make any new additions on account of pregnancy. **The main item added was green leafy vegetables by 84 percent women. Milk, fruits, protein rich foods were other most commonly cited food items added to the diet.** Non-vegetarian items like eggs and meat were consumed by only around one-fourth of these women.



(C). Food items avoided by women on account of pregnancy

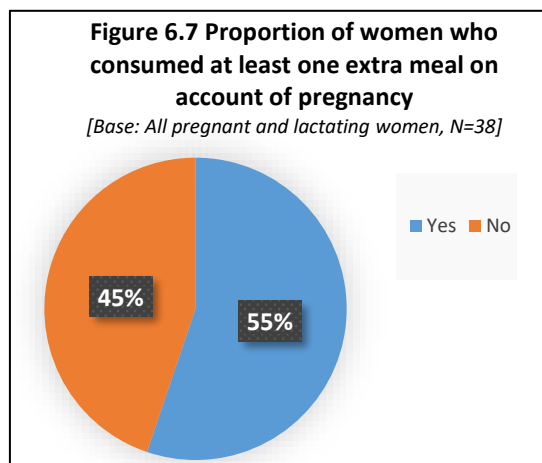
Subsequently these pregnant and lactating women were queried about specific food items they avoided or stopped eating during their pregnancy term. A little more than one fourth of them said they did stop eating any food item. Out of the remaining women who did avoid some specific food items, **majority of them said they stopped eating papaya (37%)**. Papaya is mainly avoided because of the presence of papain which can induce unwanted uterine contractions. Other food items avoided by 5 percent respondents were curd, toor dal and peas.





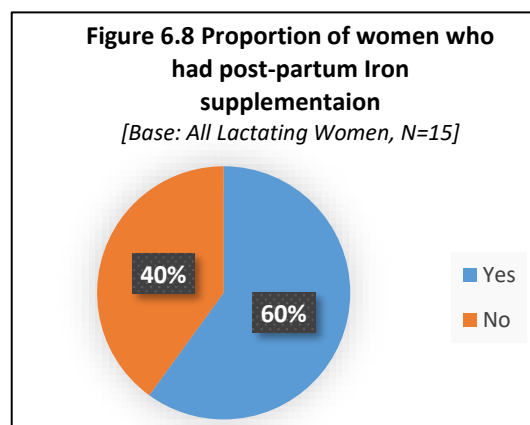
(D). Consumption of extra meals on account of pregnancy

Pregnant women are required to consume extra meals for meeting the nutritional requirements of the woman and the growing baby. Pregnant and lactating women were asked to recall if they had started consumption of extra meals on account of their pregnancy. **More than half of the respondents had indeed started in taking extra meals.** The average number of meals per day for these women before pregnancy period was 2.8 and during pregnancy it increased to 3.6 meals per day



6.3 POST-PARTUM IRON SUPPLEMENTATION IN WOMEN

Post-partum anaemia prevalence in developing countries ranges from 50% to 80%³. About 29.8% of women who were not previously anaemic during pregnancy become anaemic after delivery⁴. These estimates indicate post-partum anaemia as a public health problem that requires greater attention. Post-partum anaemia can lead to postnatal depression, delayed wound healing, urinary tract infections, fatigue and exhaustion, insufficient and reduced milk quality and low immunity.



Hence, post-partum iron supplementation is essential to prevent iron-deficiency anaemia and to provide nutrient support to the lactating women. In this context, all lactating women were asked for their post-partum iron supplementation history. **Sixty percentage of the lactating women in the study sample had taken some level of iron supplementation in the form for IFA tablets in the past 6 months after the delivery of their youngest child.** Appreciably, all the respondents who received IFA tablets had consumed at least a few of them by the time of the survey. IFA

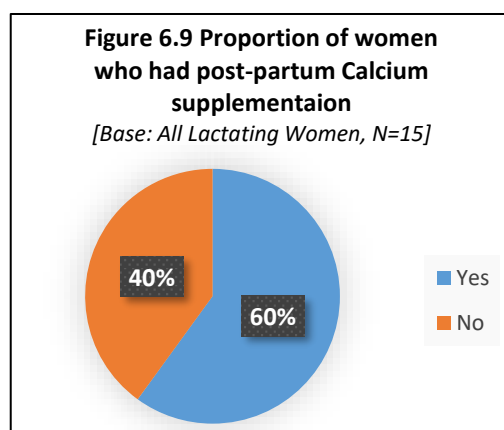
³ Milman N. Postpartum anemia: definition, prevalence, causes, and consequences. *Ann Hematol.* 2011;90:1247– 1253

⁴ Reinold C, Dalenius K, Smith B, Brindley P, Grummer-Strawn L. Pregnancy Nutrition Surveillance 2007 Report. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2009.

tablets received and consumed by lactating women during their post-partum phase ranged from 10 to 80 tablets. **On an average, these women received 37 IFA tablets and average consumption stood at 34 tablets. 7 out of 15 lactating women (47%) received a minimum of 30 tablets and 40% (6 lactating women) consumed similar quantities.** Though gap between receipt and consumption of IFA tablets during pregnancy was not registered in the estimates of post-partum supplementation, the current levels are considerably lower than the recommended consumption standards, which is 180 tablets after delivery. There is a dire need to augment awareness of mothers in the slum area about the essentiality of IFA supplementation for a period of six months after delivery in addition to strengthening of supply chain of IFA distribution.

6.4 POST-PARTUM CALCIUM SUPPLEMENTATION IN WOMEN

Along with IFA supplements, women are required to consume calcium tablets to meet additional nutritional needs. Similar to iron supplementation, calcium is also an important mineral that lactating women should take for at least three months after delivery. It contributes to bones reconstruction and production of breastmilk post-partum. Mothers of children aged 0-5 months (lactating women) were also inquired about their calcium receipt and intake



of calcium tablets after delivery. **Sixty percentage of these women received calcium tables in numbers ranging from 10 to 120.** All these women who received calcium tablets, consumed at least a few of them. However, as against **53% who received at least 30 calcium, only 40% of lactating women consumed similar quantities.**

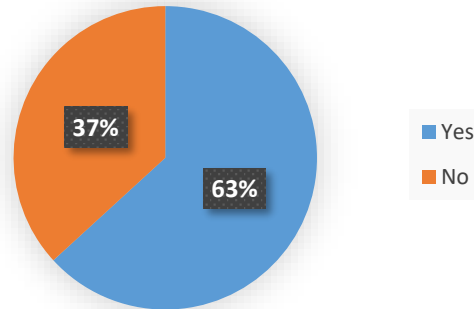
Mean number of calcium tablets received after delivery was found to be 51 while average consumption stood at 40 tablets. As per the directives issued by the Government of India in 2015-16, every pregnant woman should be given 2 Calcium tablets per day for 180 days starting from the second trimester of her pregnancy up to delivery and further for 180 days post-delivery. Therefore, it was expected that the respondents could have consumed a maximum of 360 tablets during their pregnancy and up to 360 tablets in their running post-partum stage at the time of the survey. Since the current level of calcium intake is much below the recommended levels, the study area requires intervention support in extending the inclusion of calcium supplementation among pregnant and lactating women along with the strengthening of IFA distribution.

6.5 DIETARY DIVERSITY IN 2-5-YEAR-OLD CHILDREN

A balanced diet is fundamental for healthy growth and development of children. Similar to the method followed to assess dietary diversity of children below 2 years, diet composition of children aged 2-5 years was also explored in as part of the survey. Though MDD for 2-5 years is not a globally recognised indicator, it has been computed here to get an overall understanding of the dietary and nutritional diversity of food intake among children of 2-5 years in the study area. MDD calculation of 2-5 years old children was exactly similar to that of the MDD calculated for 6-23 months old children described in the previous chapter.

Figure 6.10 Proportion of 2-5 year old children with Minimum Dietary Diversity

(Base: 2-5 year old children, N=114)

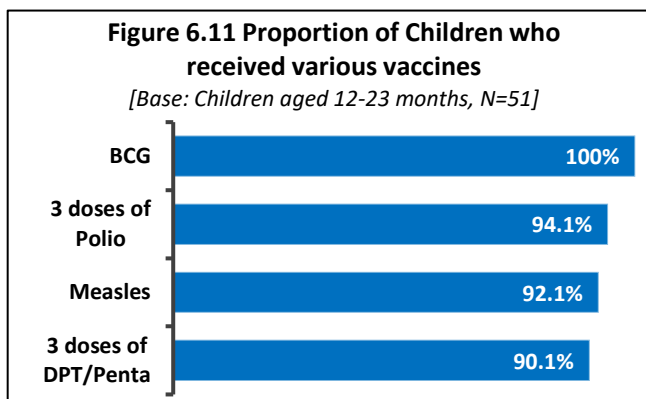


Mothers were asked to recall everything they fed to the children on the previous day. The food items were then classified into 7 food groups comprising of grains, roots and tubers; legumes and nuts; dairy products; flesh foods; eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables. Children who consumed 4 or more groups were considered to have minimum diet diversity. As depicted in figure 6.10, **this survey found 63 percent of children of 2-5 years of age were fed an adequately diverse diet.** Further emphasis needs to be laid on expanding awareness about importance of nutrient dense diet for children in this age group as they are in rapid growth and development phase of their lives and the adequate nutritional intake in this period is paramount to result in optimal growth outcomes.

6.6 IMMUNIZATION IN CHILDREN

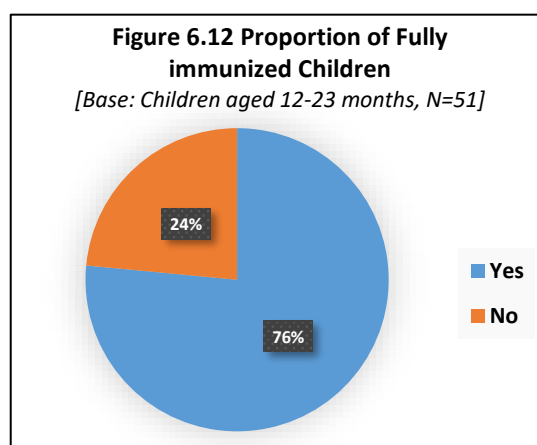
Immunization is one of the most powerful tools to end preventable child deaths, saving up to 3 million children a year. It is an effective way to prevent children against deadly infectious diseases by producing antibodies that develop vaccine-induced immunity in the body. Vaccines against many diseases are available in the world now and a few like tetanus, diphtheria, pertussis, polio, measles, mumps etc. are mandatorily given to children aged 12-24 months. Today, four out of five children around the world are vaccinated against deadly diseases, compared to only one out of five just over 30 years ago.

The assessment of immunization coverage among children between 12-23 was also done as part of the survey. The information was collected on the basis of two sources of information. The first and main source was by checking the vaccination / mother and child protection cards to correctly capture the details about receipt of various



kinds of vaccinations that the child should have received based on the standard list. Only for a few cases where MCP card was not readily available, interviewers relied on mother's recall.

Overall findings suggest an impressive coverage of critical set of vaccines among children of 12-23 months of age in the study area. As evidenced in figure 6.11, the survey found that all the children aged 1-2 years were given BCG vaccine for Tuberculosis. Similarly, very high proportion of children, almost 9 in 10, were given 3 doses of polio (94%), Measles (92%), and 3 doses of DPT/Penta (90%). In India, a fully immunized



child means, one who have been given vaccines: BCG, Measles and 3 doses each of Polio and DPT by the time of two years of age. **A little more than three-fourth (76%) of the children in 12-23 months age category had received all the four type of vaccines** the required number of times and hence, they could be regarded as fully immunized children. Even though the proportion of fully immunized children in this slum area is found to be satisfactory, there is scope for improvement. During IDIs ASHAs and AWWs mentioned many mothers refusing vaccinations because of some beliefs like vaccinations can cause fever and make the child impotent. Reinforced health education is required to bring about a change in such beliefs.

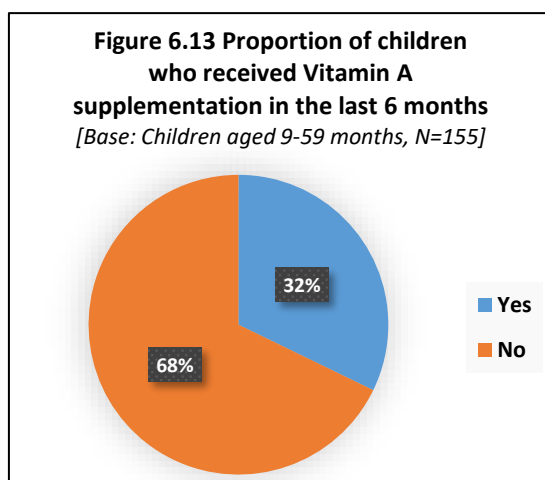
“A lot of mothers refuse vaccinations in this area. According to mothers, previously when vaccinated, the child developed fever and they decided to not give any vaccinations to child. We try to educate them.” – ASHA

“Mothers from a particular religious’ community also refuse vaccinations. They say that vaccinations can make their children impotent”. -AWW

6.7 VITAMIN A SUPPLEMENTATION IN CHILDREN

WHO recommends Vitamin A supplementation for children aged 9-59 months for preventing night blindness and other associated conditions of Vitamin A deficiency? Improving the vitamin A status of deficient children through supplementation enhances their resistance to disease and can reduce mortality from all causes by approximately 23 per cent⁵. Mothers of 9-59 months children in the survey were asked whether their child had received Vitamin A dose in the last 6 months preceding the

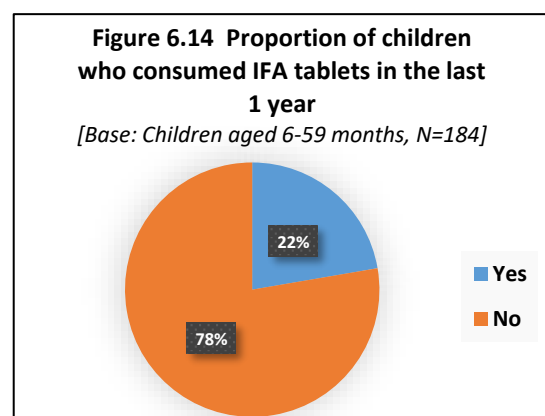
survey and their MCP card was also checked for reconfirmation. Figure 6.13 presents status of Vitamin A supplementation among children of 9 to 59 months in the slum area. The study found low proportions of children who had received Vitamin A. **A little less than one-third of the children only had vitamin A supplementation.** Considering that vitamin A deficiency leads to severe health repercussions, the existing level of supplementation calls for programmatic support to expand its coverage in the study area.



6.8 IRON SUPPLEMENTATION IN CHILDREN

Iron supplementation in children is a population level strategy to prevent iron deficiency anaemia in children. Mothers were asked to provide any history of iron supplementation in their children. Overall, the study found a very low proportion of children aged 6-59 months who had been given iron supplementation in the last one year. **Only 2 in 10 of the children between 6-59 months of age had IFA tablets or syrup in**

the last one year. This finding is similar to the iron supplementation of pregnant and lactating women in this sample, which further signifies that iron supplementation is a critical area for intervention.



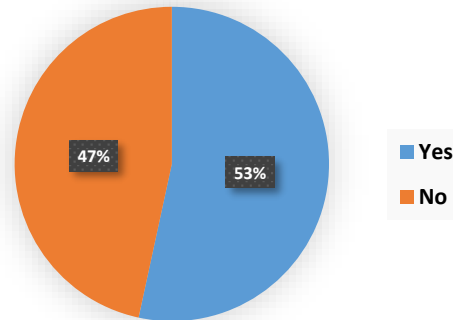
⁵Accessed from: https://www.unicef.org/publications/files/Vitamin_A_Supplementation.pdf

6.9 CONSUMPTION OF DEWORMING TABLETS AMONG CHILDREN

Intestinal worms can be detrimental to the child's development. There is enough scientific evidence to show that soil-transmitted helminthic infections can aggravate mal-nutritive states like stunting and wasting in under five children. It is recommended to give one dose of albendazole 400 mg a year to children aged 12–59 months. Mothers of children aged 12 months and above were asked about deworming history of their children. **Only around half of the children in this age group**

Figure 6.15 Proportion of Children who consumed deworming tablets in the last one year

[Base: Children aged 12 months or above, N=142]



were given deworming tablets in the last one year. When considering the estimates, there appears to be a need for particular stress on strengthening the distribution of deworming tablets among children.

6.10 GROWTH MONITORING OF CHILDREN

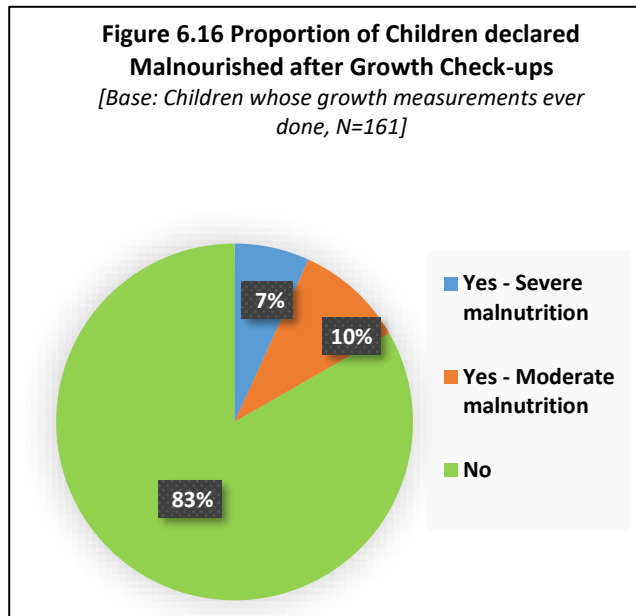
'Growth Monitoring and promotion of children from birth to five years is one of the important activities of frontline health workers, particularly of Anganwadi Worker (AWW) under the Integrated Child Development Scheme (ICDS) programme. Growth monitoring is a regular measurement of growth which enables mothers to visualise growth, or lack of it, and obtain specific, relevant, and practical growth guidance to ensure continued regular growth and health of children. Weight for age has been adopted as the method for assessment and improvement of nutritional status of children under the ICDS programme. The task of growth monitoring requires technical skill on the part of the AWWs for proper weighing, plotting weight on growth charts, interpreting growth curve, and finally using the growth card as a tool for imparting education to mothers to promote child growth'.⁶ Study also assessed coverage of growth measurements of children in the slum area. Mothers of children 6 to 59 months were probed whether AWW or any health worker had undertaken their youngest child's growth measurements ever either in facility based check-ups or home visits. **88% of them affirmed that growth measurements of their child had been done at least once.**

⁶ GROWTH MONITORING MANUAL, National Institute of Public Cooperation and Child Development. <https://www.nipccd.nic.in/file/elearn/manual/egm.pdf>



(A). Children declared malnourished after anthropometric measurements

Recording anthropometric measurements like height, weight and mid-upper arm circumference of children can determine the presence of malnutrition in children. Mothers of children aged 6-59 months who mentioned that their child's growth measurements was done by a health workers were further probed whether their child was declared as malnourished after any of such growth check-ups. More than four-fifth (88%) of these mothers stated that their



child was declared to have normal growth status in all such anthropometric measurements. **7 percent and 10 percent of mothers mentioned that their children were diagnosed as severely and moderately malnourished respectively.** This fact underlines the need to facilitate appropriate interventions to improve the nutritional status of children in the slum.

(B). Children who received treatment for malnourishment

As a logical sequence to the above query, mothers of malnourished children were asked about any treatment provided to their children to improve their nutritional status. The survey found that a little **more than three-fourths (76%, 19 out of 25) of the malnourished children received treatment timely.**

6.11 EFFECT OF COVID-19 ON HEALTHCARE SERVICES AND NUTRITIONAL PRACTICES

Deadly infectious viral disease Covid-19 has affected every aspect of human life, creating a humanitarian crisis. Hence it is of utmost importance to study how this virus has affected child and maternal healthcare services and household nutritional practices, for driving policy level changes in the future. The survey tool had tried to capture this by incorporating a few questions related to impact of Covid-19 on maternal and child health services and overall nutritional practices of the households in the slum area.

(A). Effect of Covid-19 on Child Health Services

Mothers of children aged 6 – 59 months were asked about any difficulties they faced while accessing child healthcare services during Covid-19 pandemic and the nation-wide lockdown. Almost half of these mothers (45%) stated having faced some difficulties related to child healthcare services. Following this, these mothers who had faced difficulties were queried about the specific problems that they encountered in child health arena that were induced by CoVID-1 restrictions.

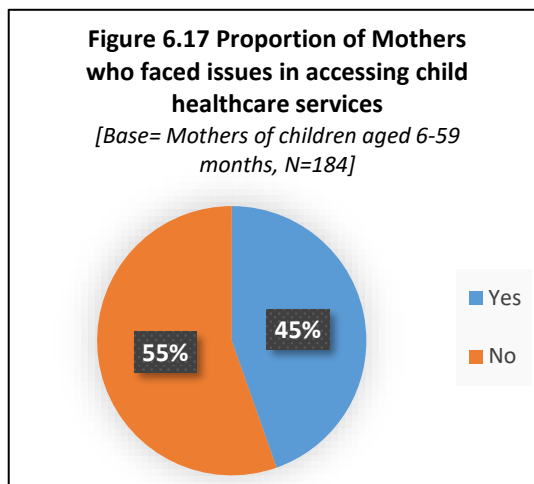
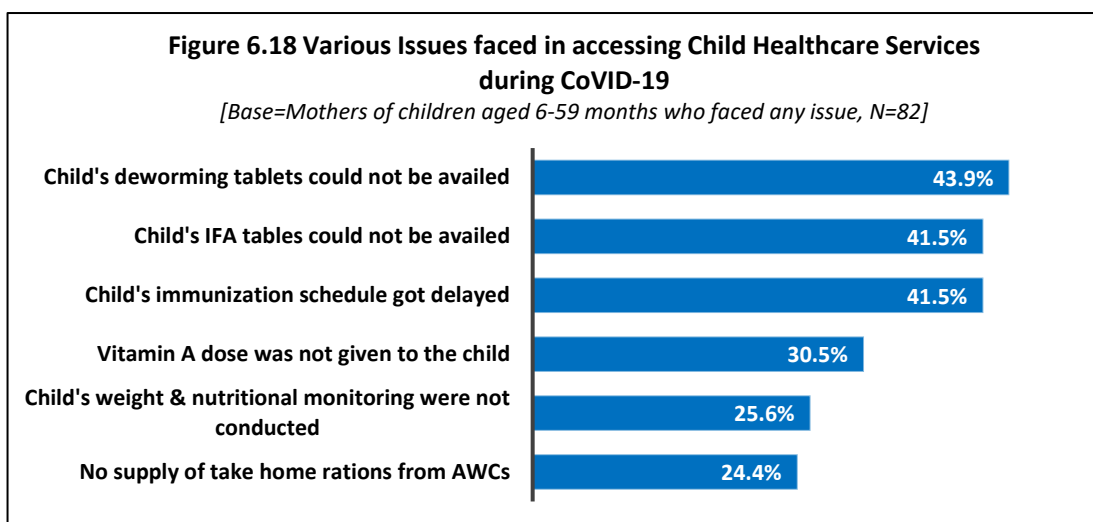


Figure 6.18 details findings obtained in this regard.

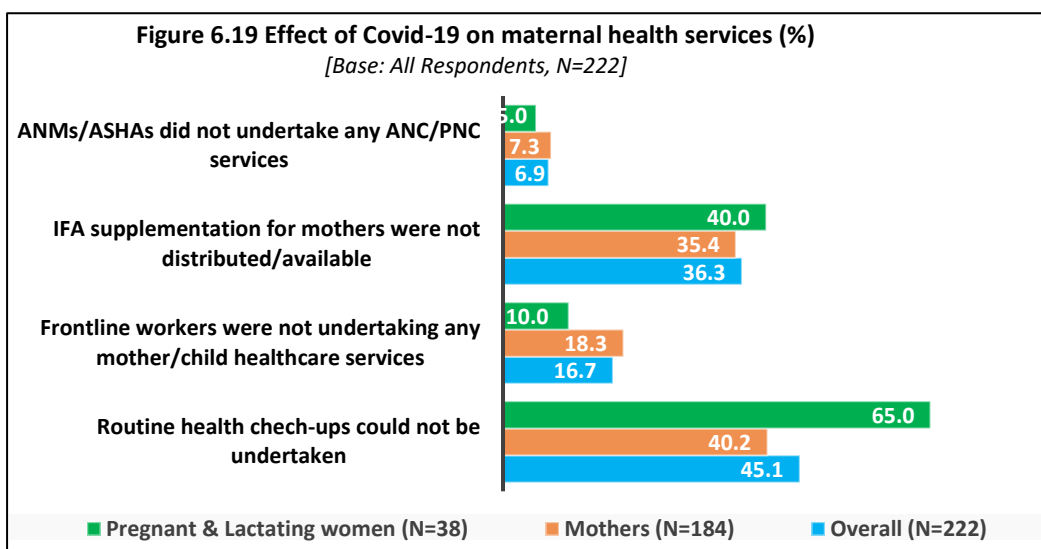


Around two-fifths of these mothers had barriers related to availing deworming tablets (44%), IFA tablets (42%) and timely vaccination (42%) for their children. Another 31 percent mothers could not give Vitamin A dose to their wards. Similarly, a fourth of these mothers did not get take home rations from Anganwadi centres (24%). Child’s weight and nutrition monitoring was under halt for 26% during CoVID-19 pandemic in Bhanwar Singh Camp area. Findings are very much in tune with lower levels of micro-nutrient supplementation reported among the children. To some extent, CoVID-19 related restrictions had affected the receipt of requisite supplements making its coverage at the time of survey lesser than optimal levels.

“During Corona child vaccinations got delayed and IFA tablets were not supplied” -FGD

(B). Effect of Covid-19 on maternal health services

All study respondents were asked to enumerate the effects of Covid-19 pandemic and the subsequent lockdown on maternal health services. We learnt that 20 pregnant and lactating women and 80 mothers mentioned having some obstacles in accessing/receiving maternal healthcare services. These women were asked about the services they could not avail owing to the pandemic situation in the country. Most of the women (45%) complained about not being able to undertake routine health check-ups.



Similarly, around one-third of pregnant and lactating women (40%) and mothers (35%) did not receive the recommended IFA supplementation. Even during IDI discussions ASHAs cited that calcium and iron tablets distribution was difficult during Covid-19 but they tried by approaching women at their houses during lockdown to supply the tablets. The least affected services were ANC and PNC services. Only 7 percent of the respondents mentioned that antenatal and postnatal services were not undertaken by the ASHAs/ANMs due to Covid situation in the country. But during IDI discussions ASHAs cited that tried their best to distribute calcium and iron tablets by approaching women at their houses.

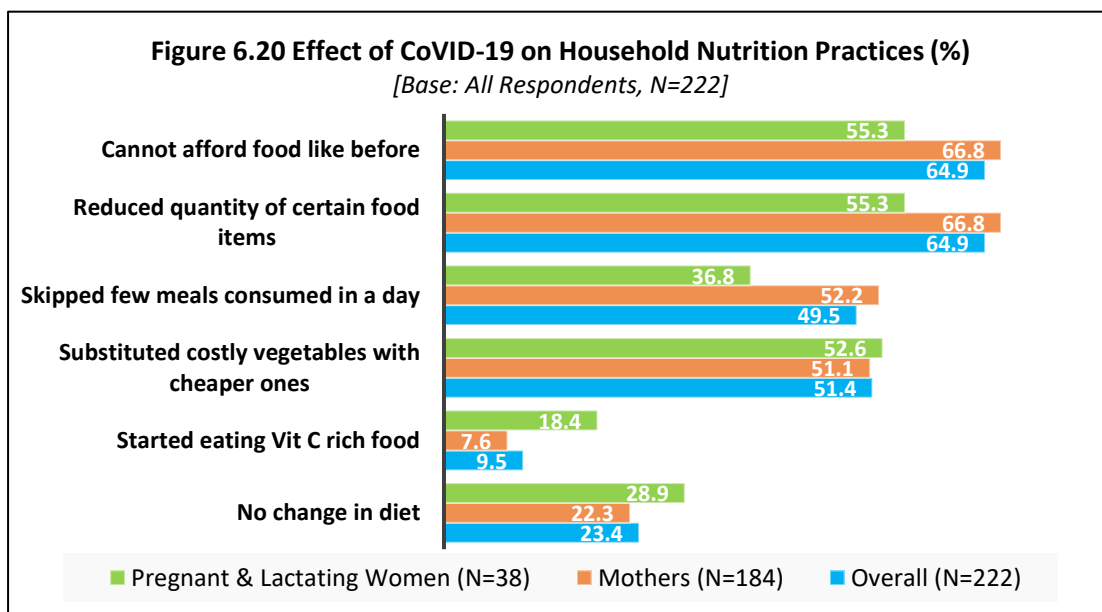
“It was difficult to give iron and calcium tablets during Covid lockdown, but we tried our best to distribute calcium and iron tablets by going door to door”. -ASHA

(C). Effect of Covid-19 on Household Nutrition

All the respondents were asked how Covid-19 and the consequent lockdown had affected the nutritional intake needs and practices of their households. Figure 6.20 depicts that more than half of all pregnant and lactating women (55%) and more than two-third mothers (67%) in the study area stated that their **households cannot afford food items like pre-Covid times and therefore has reduced the quantity of certain food items**. The



main reason for this non-affordability is unemployment or losing means of livelihood of these households leading to poverty. **Half of the respondents also expressed their concern of skipping a few meals in a day (50%) and substituting costly vegetables with cheaper ones (51%) to curb down costs of living. One tenth of these women also said that they started consuming more vitamin C rich food items like gooseberry and lemon as an immunity booster against the pandemic.** Share of households of pregnant and lactating women depicted relatively higher tendency to adopt this practice. **Overall, other than a quarter of the respondents, CoVID-19 or nation-wide lock down had affected diet or dietary practices of the rest of the households.**

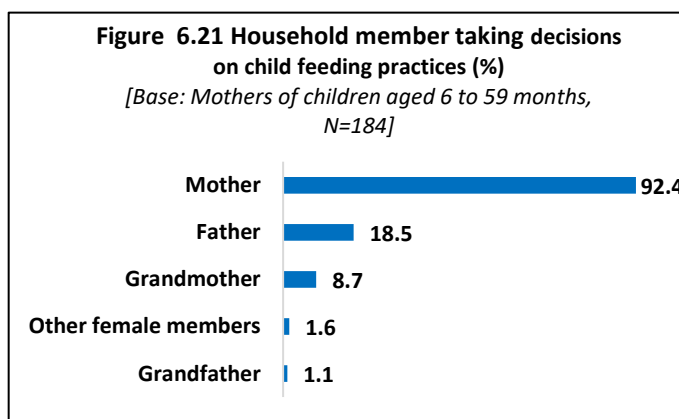


6.12 HOUSEHOLD NUTRITION AND CHILD FEEDING PRACTICES

In this section respondents were asked about involvement of various household members in practices related to child nutrition and feeding. **This information is relevant while selecting target respondents for interventions related to child feeding practices.**

(A). Decisions related to child feeding practices

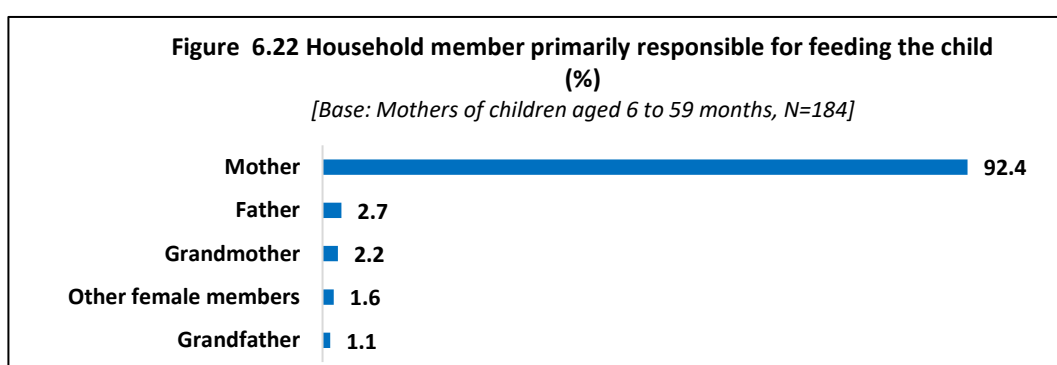
All mothers of 6-59 months old children were asked about who in the household takes decisions about child feeding practices. Figure 6.21 reflects



responses received for this query. **A large proportion of mothers (92%) stated that they themselves make the decision regarding feeding practices of the child.** Other important members taking these decisions were father (19%) and grandmother (9%) of the child.

(B). Household member primarily responsible for feeding the child

All mothers were also asked which household member is primarily responsible for feeding the child. From figure 6.22, it is evident that **the mother herself feeds the child in most the households.** Thus mothers play the vital role in children’s diet practices in almost all the households in the study area. Very few women also mentioned the father or the grandmother also being the person who feeds the child.



(C). Involvement of parents in taking care of the child and household chores

All mothers were enquired about the average time she and her husband spend in taking care of the child and doing the household chores in a day. Such an investigation further gives interesting insights about the organisation of household work and care giving in the slum area. Table 6.2 shows **that mothers spend an average of 6 hours and 3 hours in taking care of the child and household chores respectively. Whereas, fathers spend lesser time of 2 and 1 hours in caring the child and doing domestic chores respectively.** Instances of fathers not involved in both of these were also reported in the interview. Results indicate that household chores and child care primarily fell on women’s shoulders.

Particulars	Average time spend in a day	Range
Time spend by mother in taking care of the child	6.2 hours	1 – 24
Time spend by father in taking care of the child	2.4 hours	0 – 9
Time spend by mother in household chores	3.4 hours	1 – 10
Time spend by father in household chores	1.2 hours	0 – 7

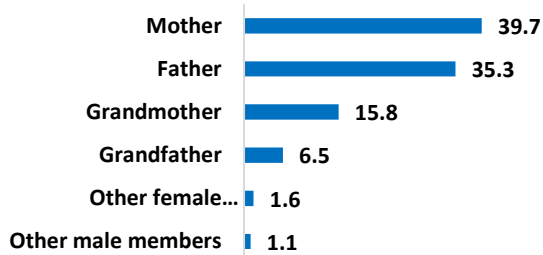


(D). Household member responsible for buying foods like pulses, cereals, vegetables, milk, and non-vegetarian items

Survey also explored from mothers of children aged 6-59 months about the household member responsible for buying foods like pulses, cereals, vegetables, milk and non-veg items. Figure 6.23 shows that **mothers (40%) and fathers (35%) buy these kind of foods in most**

Figure 6.23 Household member responsible for buying various food items

[Base: Mothers of children aged 6 to 59 months, N=184]



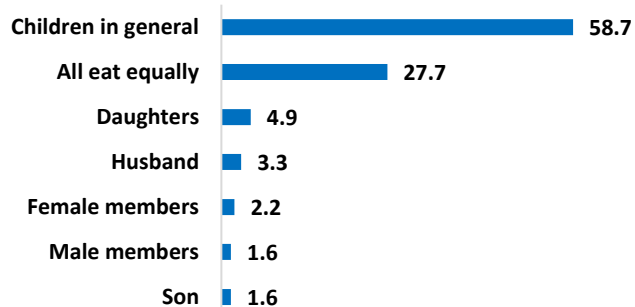
of the households. Adult male and female members appeared to have similar stake in this aspect. That particular household member's knowledge about various nutritional indeed shape household's food consumption in addition to the economic status.

(E). Household member fed first when quantity of nutritious food availability is less

Mothers of children aged 6-59 months were further asked who in the household is fed when the quantity of nutritious food available is less. Figure 6.24 depicts that a **majority of 65 percent women who said they feed their children first in such situations, however, some 5 and 2 percent**

Figure 6.24 Household member fed first when quantity of nutritious food is less

[Base: Mothers of children aged 6 to 59 months, N=184]

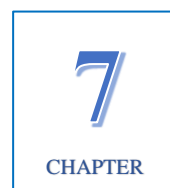


mothers also specified that they would prefer their daughters and sons to others respectively. In around a quarter of the households, all members will eat equally even when there is shortage of food. Consecutively, these mothers were asked if this is a usual practice or began during Covid-19 period. **More than half of them (54%) said it is a usual practice in their households when nutritious food is lesser than the requirement. 5 percent mothers felt that their children are weak and hence feed them first routinely.**



This finding suggests that despite having food shortage in the house during Covid times (fig 6.20), the children were prioritised as a common practice. To some extent, better dietary diversity among children than that of mothers can be attributed to this behaviour of the households.

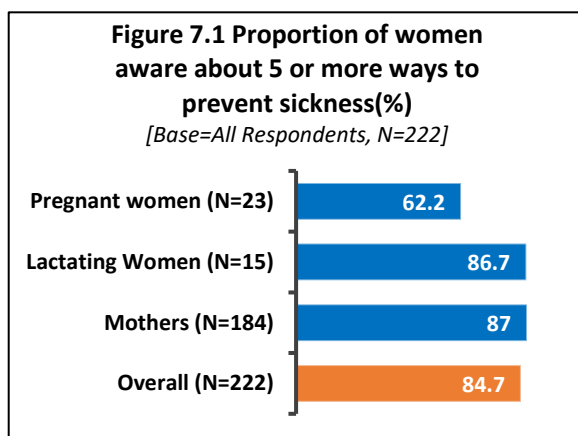
WATER, SANITATION AND HYGIENE (WASH)



WASH services include availability of adequate water, sanitation and hygiene for protecting the health of individuals. WASH is an essential component of basic health services. Ensuring sufficient quantity and quality of improved water sources and easy accessibility to clean and improved sanitation facilities can prevent many infectious diseases that kill millions a year including pregnant women and under five children. According to United Nations, India accounts to one-fifth of all child deaths due to severe diarrhoea and highest percentage of open defecation in the world. As part of Sustainable Developmental Goal No.6, all the nations including India have resolved to achieve universal access to safe drinking water and adequate sanitation and hygiene to all in the next ten years. The baseline survey also examined WASH status of the study area. This chapter presents the findings with reference to the knowledge, attitude and practices of respondent households regarding personal hygiene habits such as hand washing, toilet usage, and water treatment among many others.

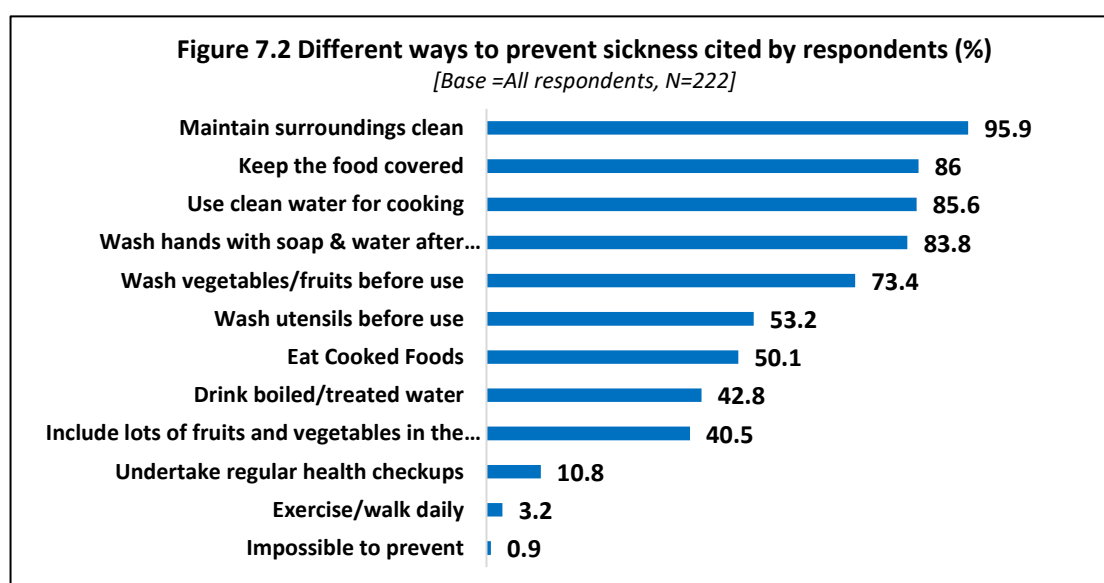
7.1 AWARENESS ABOUT WAYS TO PREVENT SICKNESS

Awareness assessment is the first step in evaluating the existing knowledge of the respondents that will aid in designing appropriate health education or behaviour change interventions in the community. A woman's knowledge about different ways to prevent illness can have a direct impact on the health of the family as a whole. Hence, all the pregnant women, lactating women and mothers of children aged 6-59 months were enquired



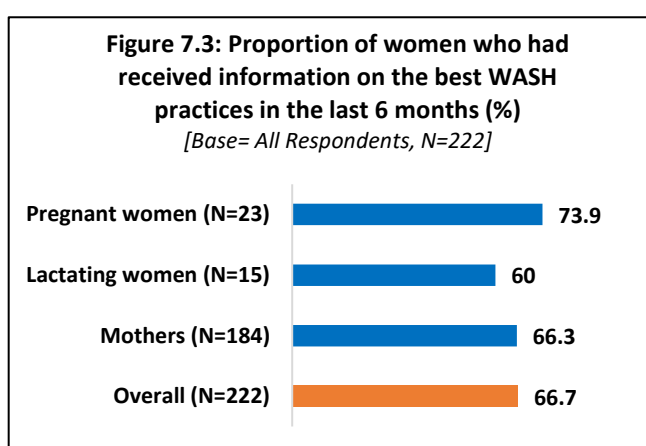
about their awareness on various ways to prevent sickness/illness. The options were not read out to the respondents and they were encouraged to name as many methods as they could recall. While a substantial proportion of lactating women (87%) and mothers (87%) were aware about at least 5 ways to prevent sickness, only about 62 percent pregnant women knew 5 or more ways to prevent illness. **Overall, 85 percent women were able to cite (unprompted) at least five ways to prevent sickness.**

About different strategies to prevent illness, these women were most aware about maintaining surroundings clean (96%), keeping the food covered (86%), using clean water for cooking (86%) and washing hands with soap and water after touching anything unclean (84%). About three quarters of them were acquainted with knowledge of washing vegetables, fruits before use (74%). Around half of them were aware about washing utensils before using (53%) and eating well cooked foods (50%). Two important areas which the respondents lacked knowledge were undertaking regular health check-ups (11%) and daily exercise (3%). This points to lack of health education covering these areas.



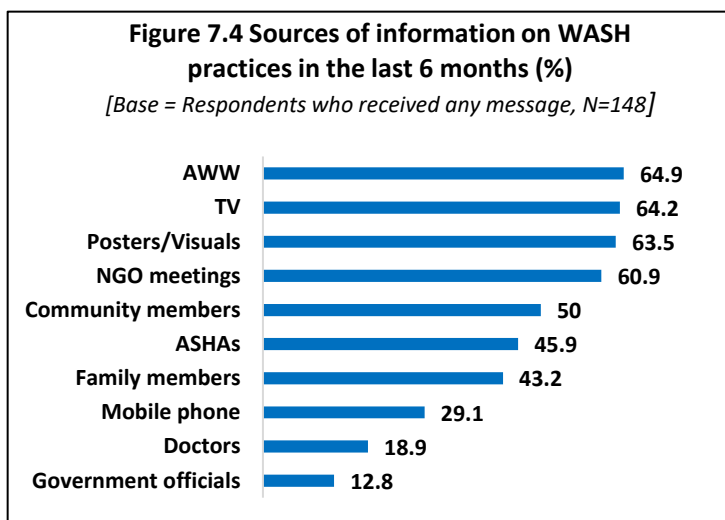
7.2 SOURCE OF INFORMATION ON WASH PRACTICES IN THE LAST 6 MONTHS

Before planning different WASH interventions, it is best to understand the awareness in the community. All the women respondents were asked if they received any information on the best WASH practices in the last six months. Nearly three fourths of all pregnant women, and about two thirds of lactating women and mothers had received information in this regard (Figure 7.3).



mothers had received information in this regard (Figure 7.3). **Overall, 2/3rd of respondents received information on recommended WASH practices in the last 6 months.**

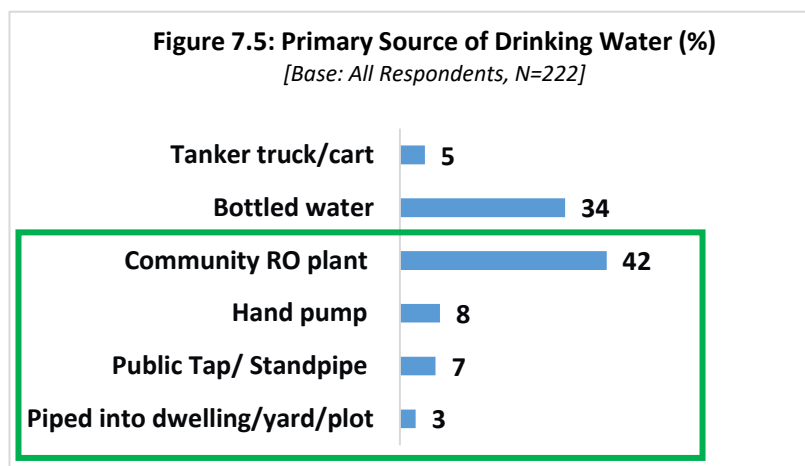
Respondents who said they had received guidance on desirable WASH practices were then probed to mention the sources of such information. Among them, around two third mentioned Anganwadi worker (65%), TV (64%) and posters/visuals (64%) as their source. Guidance from NGO meetings, community



members, ASHAs and family members were also cited by considerable number of them.

7.3 PRIMARY SOURCE OF DRINKING WATER

Drinking water from improved and safe sources like piped household water connection, RO plant, public tap, protected dug well etc. has a direct impact on health of the individuals by preventing many



water borne diseases. Higher number of the households obtained their **drinking water from a safe source of Community RO plant (42%) and another 18 percent relied on improved sources like handpump, public tap/stand pipe or piped water supply.** However, a significant proportion still used the unsafe methods like bottled water (34%) and tanker water (5%). On the whole, **reliance on improved source of drinking water was found to be just 61%**, which calls for added focus of interventions in enhancing accessibility to safe sources of drinking water.

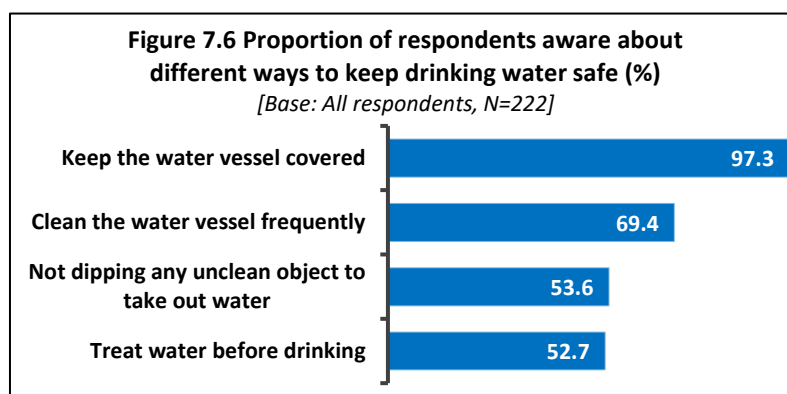
7.4 KNOWLEDGE AND PRACTICES RELATED TO WATER

The provision of safe drinking water is essential in maintaining the quality of life. Of the 6 billion people on earth, more than one billion lack access to safe drinking water and, about 2.5 billion do not have access to adequate sanitation services. In addition to these

shortcomings, various types of waterborne diseases kill on an average more than 6 million children each year i.e. about 20,000 children a day⁷. Sections ahead describe survey results related to knowledge and practices of respondent households to ensure safe drinking water and water for other requirements.

(A). Awareness about different ways to keep drinking water safe

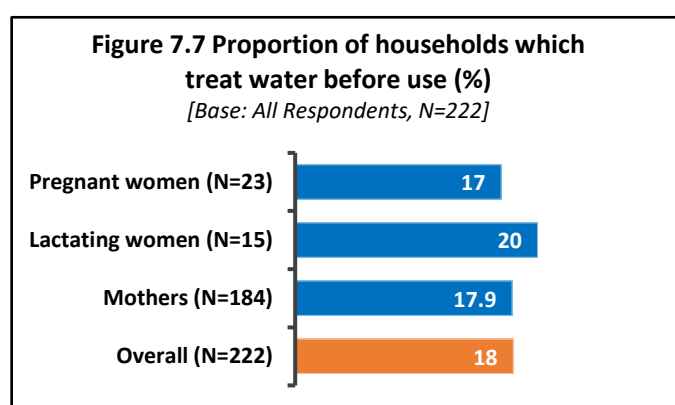
Contamination of water can occur anywhere in the supply system from the source of origin to the point of use. There are simple domestic techniques to ensure safety of



water at the point of consumption. All the women were asked about their awareness on various ways to keep drinking water safe. Appreciably, **all women were aware about at least one of these methods**. Most of the women were knowledgeable about keeping the drinking water vessel covered at all times (97%). Other prominent ways mentioned by respondents to use the drinking water safely include cleaning the water vessel frequently (69%), not dipping any unclean object/cup to draw out water from the vessel (54%) and treating water before drinking (53%).

(B). Practices adopted to treat water before use

Water contamination at source or in the pipeline system can be eliminated only by water treatment. Hence treatment of water before use is essential. Even otherwise, it is recommended to treat water before using it for drinking and cooking. Pregnant women, lactating



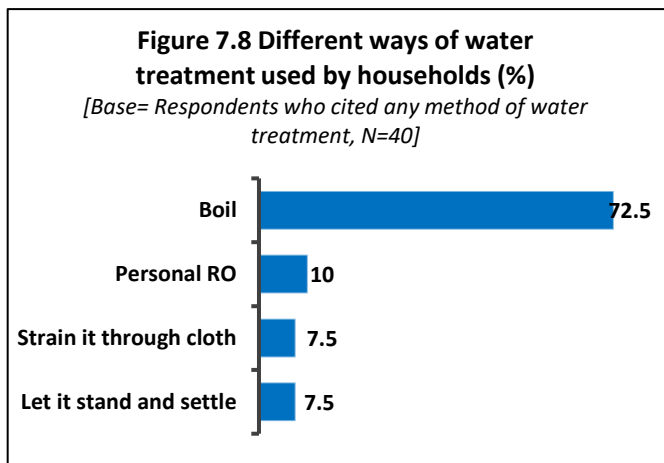
women and mothers of children aged 6-59 months were also probed about use of any

⁷ TWAS, Safe Drinking Water – the Need, the Problem, Solutions and an Action Plan. Third World Academy of Sciences, Trieste, Italy. (2002)



water treatment methods in their households. **A very low proportion of less than one-fifth of these households (18%) in the sample had used some methods to treat water before use** (Figure 7.7).

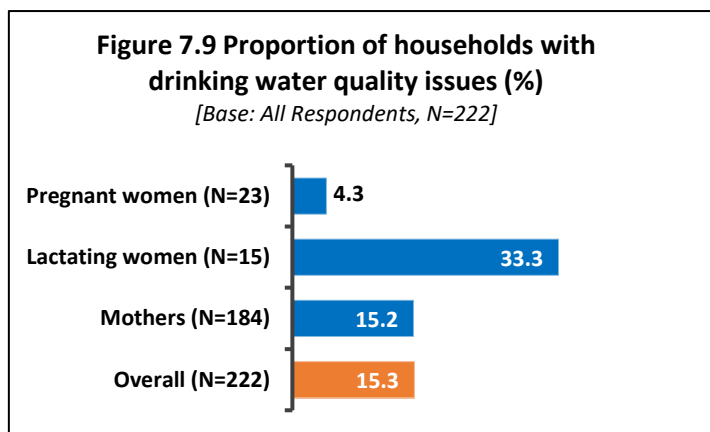
Women of the households that treat water before use, were enquired about the type of water treatment methods adopted by them. About three-fourths of the respondents boil the water (73%) before using. Other methods employed by these households were using personal ROs (10%), allowing sedimentation of water (8%)



and sieving it through cloth (8%). **Even though (figure 7.6) more than half of these women were aware about water treatment as a method to keep drinking water safe, only 18 percent actually practiced some kind of water treatment methods, which depict wide disparity between knowledge levels and actual execution of the desired steps.** Apart from health education interventions to promote behaviour change, financial or technical aids can be provided to assist these households to employ safe water treatment equipments.

(C). Water quality issues

Data suggests that about 100 million people in India are exposed to contaminated water. Poorly planned and designed infrastructure and insufficient funds to support these water supply systems are regarded as the primary reasons for this in urban India. All pregnant

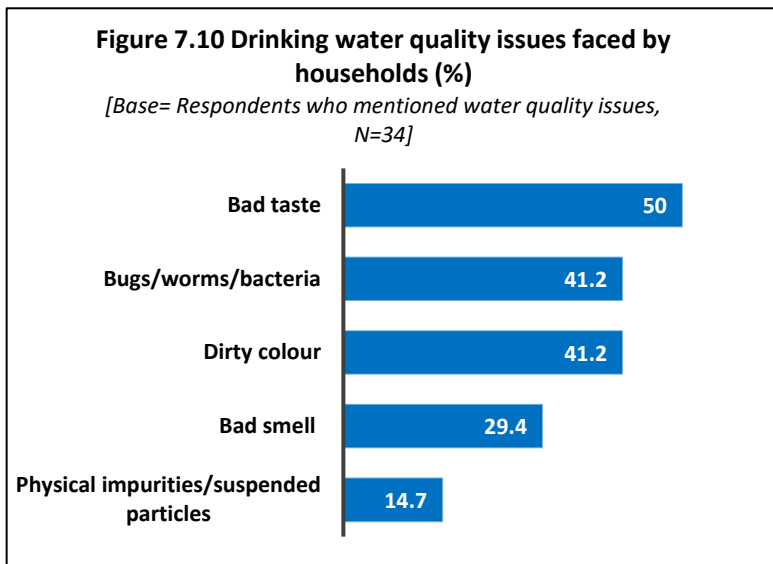


women, lactating women and mothers were enquired about any water quality issues faced by their households. **Only 34 respondents (15%) mentioned that their households faced drinking water quality issues.** Among them more than half relied on unimproved sources



of water, mainly bottled water, which further reiterates the need to focus on improving access to safe drinking water sources.

A small proportion of pregnant women (4%) and mothers (15%) and one-third of lactating women (33%) had experienced some form of water quality issues. These women were also asked to enumerate the quality issues of drinking water that they received. **Half of the**



participants complained of bad taste in the drinking water. Another two-fifths of the participants mentioned presence of bugs or worms (41%) and dirty colour (41%) in the water. Other issues of the water include experiencing bad smell and existence of physical impurities or suspended particles (15%). Only 11 out of these 34 households, which is one-third, treated water before use.

Community participation and involvement of the authorities are required to find an appropriate solution to increase the water quality. These findings on water quality issues also reinforce the importance and relevance of health promotion interventions to promote domestic water treatment in the slum area.

(D). Average number of hours of water supply per week

Adequate supply of potable water is considered an essential and basic need of healthy living. Unavailability of sufficient quantity of water is associated with unfavourable sanitation and hygiene conditions of communities. Respondents were asked about number of hours of water supply

Table 7.1 Average number of hours of water supply per week	
Respondents	Mean (hours per weeks)
Pregnant Women (N=23)	34.2
Lactating Women (N=15)	34.0
Mothers (N=184)	34.1
Total (N=222)	34.1

in a day and number of days of water supply in a week. A composite indicator of average number of hours of water supply per week was developed to understand a comprehensive

picture of water availability for these households to meet day to day requirements. **The mean number of hours of water supply per week was around 34 in all the three respondent category households.**

7.5 HANDWASHING PRACTICES

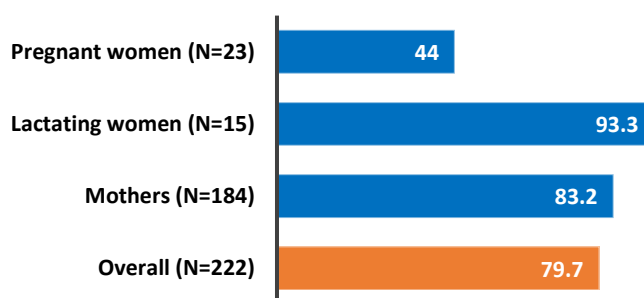
There is ample evidence to proclaim the role of hand washing in preventing many diarrhoeal and respiratory infections. For quantifying the hand washing behaviour in communities, especially women, several indicators have been developed. There are six hand washing times considered critical to reduce transmission of diseases (Table 7.2).

Table 7.2 Six critical times of hand washing

1. Before preparing food for cooking
2. Before eating food
3. Before feeding child/breastfeeding
4. After changing child's diaper/cleaning child
5. After defecation
6. After cleaning domestic animals

Hand washing with soap at six critical times – after defecation, after cleaning a child's bottom, before feeding infants, before eating, before food preparation and after cleaning domestic animals, are estimated to reduce diarrhoeal diseases by 47% and respiratory infections by 23%, thereby meaningfully

Figure 7.11 Proportion of women who did handwashing in at least 4 critical times on the day before the survey (%)
[Base=All Respondents, N=222]



contributing to reductions in infant and child mortality and improved child survival rates.⁸

Owing to importance of handwashing, all the women were asked to recall all the times they washed hands on the previous day. An appreciable proportion of **93 percent lactating women and 83 percent mothers of children aged 6-59 months had washed their hands at least four of the above mentioned critical times.** However, **less than half of the pregnant women hand washed 4 or more critical times.** This lower proportion in pregnant women could be due to the fact of having no young children and non-involvement in household chores owing to their physiological condition. **Overall, 8 in 10 women washed hands in at least 4 critical times on the day before the survey.**

⁸Spotlight on hand-washing in rural India (Water Aid).



(A). Material used for washing hands at critical times

The effect of handwashing practice gets amplified with the correct method of hand washing and use of right means such as soap and water. The ongoing Covid-19 pandemic is a timely reminder of the importance of washing hands with soap. And as a logical progression to the previous query, women were asked to describe the material that they used to wash hands. **More than four-**

fifths of lactating women (87%) and about three-fourths of mothers (73%) had used soap and water to wash hands. Only water but no soap was used by a very negligible proportion of women and none mentioned the use of ash to clean their hands.

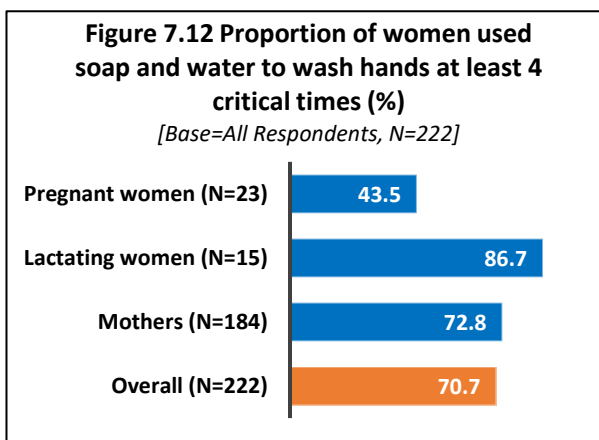
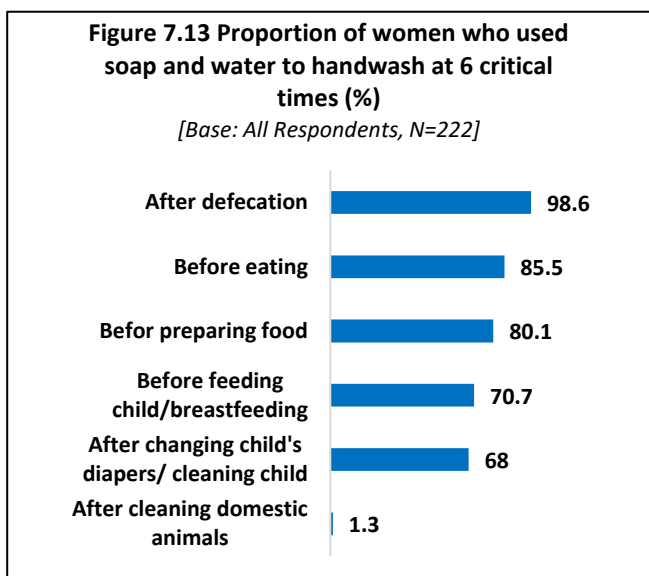
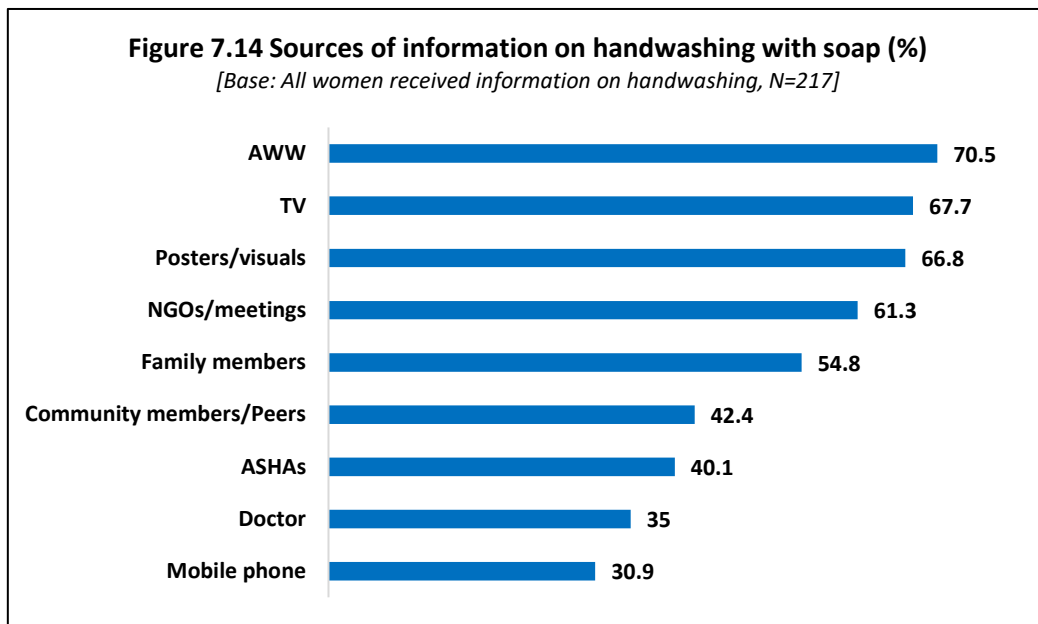


Figure 7.13 depicts that a large proportion used soap and water after defecation (99%), before eating (86%) and preparing food (80%) to wash hands. Around two-thirds of these respondents used soap and water before feeding the child and after cleaning the child. Only 1 percent used soap and water to wash hands after cleaning domestic animals, owing to the fact that in overcrowded urban areas practising animal husbandry or keeping pets is impractical or negligible.



(B). Source of information on hand washing

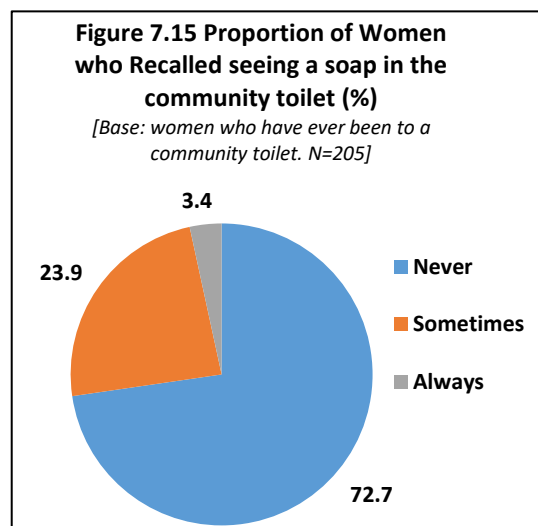
In the earlier section data showed that around 70 percent women used soap and water to wash hands at four or more critical times. All such women were asked if they received any information on handwashing with soap. **An overwhelming 98 percent of these women had received some kind of information on this.**



To these women the source of information was enquired. Identifying sources of information is relevant as this helps in involvement of different stakeholders while planning future interventions. **Around three fourths of the respondents said they had received information from Anganwadi worker (71%). Another two-thirds of them identified TV (68%), posters and visuals (67%) and NGO meetings (61%) to be the source.**

(C). Presence of soap in the community toilet

Majority of the households (64%) in this study slum shares community toilets for sanitary purposes. Hence it is important to assess the availability of soap in these community toilets. All women who had been to a community toilet before (n=205) were asked to recollect seeing a soap in the toilet during any of their usage time. **About three fourths of them said they had never seen a soap in the community toilet.** During FGD, women also mentioned that not only soap, sometimes even water

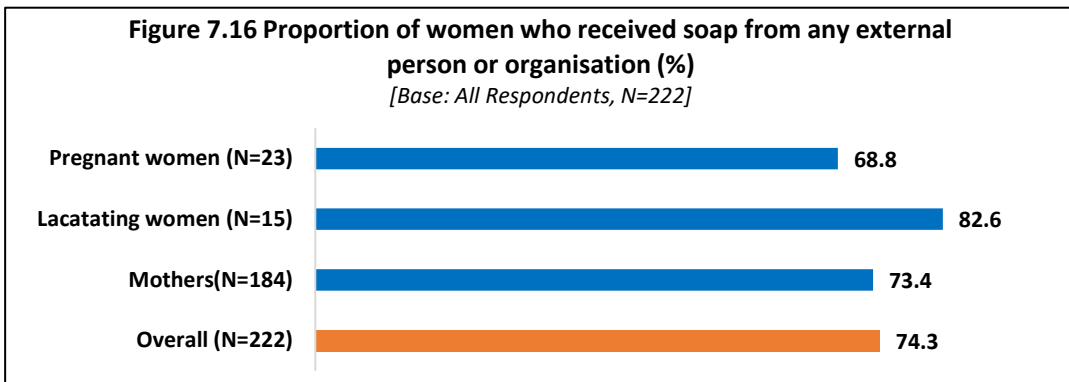


is not available for sanitation purposes. Another 24 percent mentioned seeing a soap sometimes and the remaining 3 percent said they have had seen one all the time.



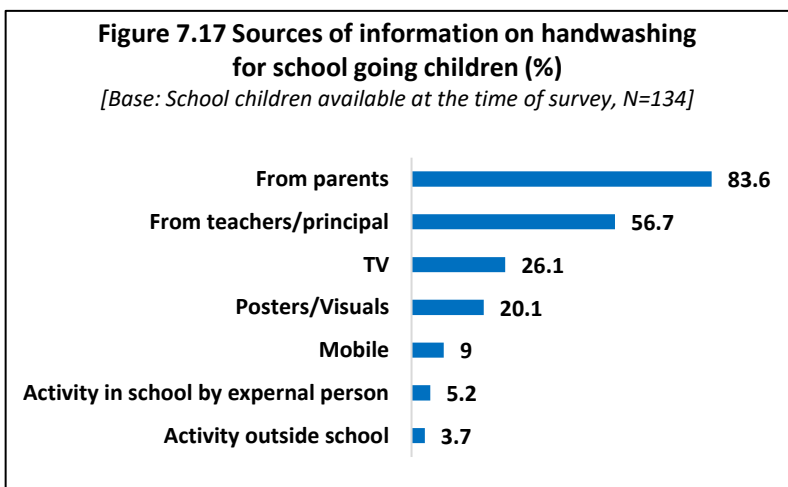
(D). Receipt of soap from any external person/organisation

Many governmental and non-governmental organisations distribute soap in economically backward communities to promote the practise of handwashing with soap and thereby improve sanitary and hygiene conditions. The respondents of this slum were queried about receipt of soap from any external person or organisation. **More than four fifths of lactating women, 73 percent of mothers and 69 percent pregnant women had received soap.**



(E). Sources of information on handwashing for school going children

It is suggested that practice of handwashing and similar good hygiene habits should be cultivated in the formative years of children. School going children in the households were asked about source of information on

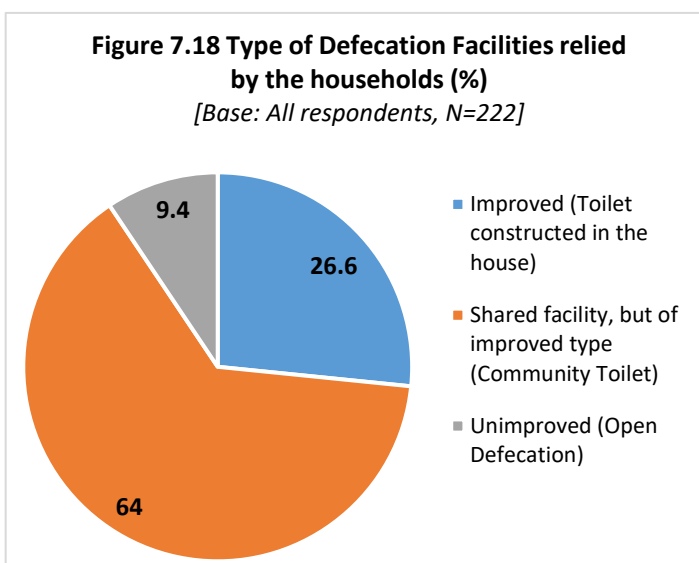


handwashing with soap if received any. For this purpose, households with school going children at the time of survey were identified. 58 of 222 households had no school going children and in 30 houses these children were not present at the time of survey. Among the 134 children from the rest of the households who were available at the time, 5 percent said they had not received any such information. **A large proportion (84%) of them mentioned receiving information from their parents. Other important sources were teachers, principal and TV.**

7.6 TYPE OF DEFECACTION FACILITY

Improved sanitation includes sanitation facilities that hygienically separate human excreta from human contact. Shared sanitation facilities like community toilets, if they are of standard toilet facility, are considered 'acceptable type' taking into account urban settings. Benefits of using improved sanitation facility array from reducing diarrhoeal diseases and severity of malnutrition to providing safety

and dignity to women. **Majority of the households (64%) in the study area used shared toilet facility (community toilet) which is of acceptable type. Only around one fourth (27%) households had a toilet constructed in the house.**



All these 59 households with a toilet constructed in the house, used improved type of sanitation facility (Table 7.3). More than two-third of

Table 7.3 Type of Toilet Facility in the Households		
<i>(Base: Households with a toilet constructed in the house)</i>		
Types of Toilet	Count	%
Septic tank with soakage pit	39	66.1
Pipe sewer system	12	20.3
Septic tank without soakage pit	4	6.8
Pit latrine	4	6.8

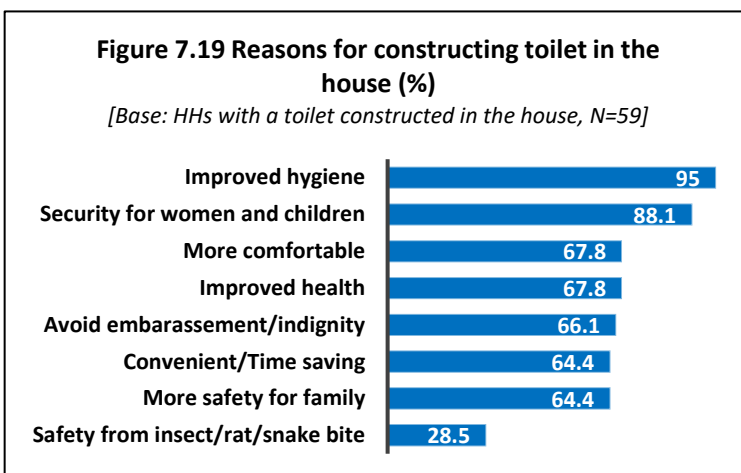
these households had septic tank with soakage pit.

An alarming proportion of 9.4 percent households still practice open defecation, calling for crucial interventions in this regard.

7.7 REASONS FOR CONSTRUCTING A TOILET (FOR HOUSEHOLDS HAVING A CONSTRUCTED TOILET IN THE HOUSE)

The findings in the previous section showed that just a little more than one-fourth of the respondents had a toilet constructed in the house. These respondents with a toilet constructed in the house were probed for persuading reasons behind toilet construction (Figure 7.19).

Almost all of them mentioned improved hygiene (95%) as the main motive. A large proportion of them also mentioned safety and security of women and children (88%) as another cause. More than two-thirds of these women also stated comfortness (68%),

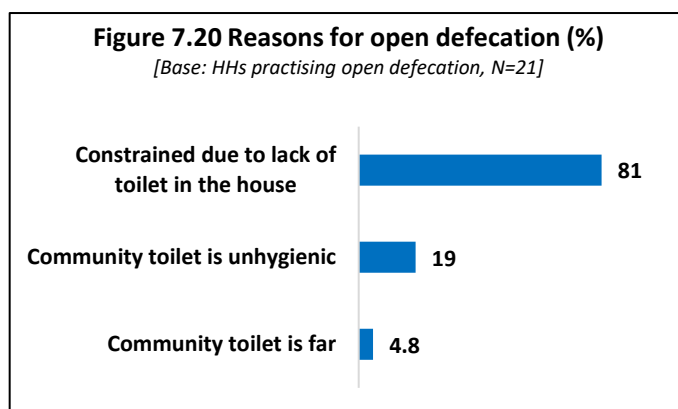


improved health (68%), to avoid embarrassment (66%), convenience (64%) and safety of all the family members (64%) as other factors that influenced their decision to construct a toilet for the household.

“Women feel ashamed and embarrassed when doing open defecation” FGD

7.8 REASONS FOR OPEN DEFECTION

Women of the households that practice open defecation was probed for reasons behind this practice. **A large majority of these women (81%) mentioned the reason of lack of toilet in the house for continuing open defecation.** A fifth of these women (19%) also stated community toilet being



unhygienic being the factor behind practising open defecation. The third reason brought up by the respondents was long distance to the community toilet. *FGDs with community members and interactions with frontline workers also revealed that open defecation is a major area of concern in the study area. It is mainly practiced by households that are located farther from the community toilet complex. In addition, timings of the community toilets also restrain the community members from making the maximal use of the facility.*

Financial and technical aid should be provided to these households to encourage construction of toilets in the house. Moreover, action plans shall be made as part of the intervention to

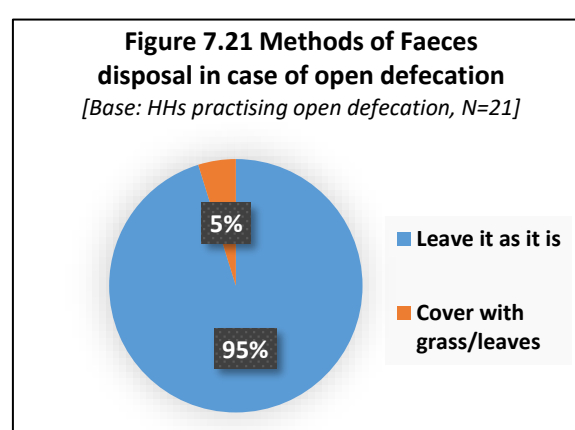
enhance the utility of the community toilets by ensuring their cleanliness and addressing gaps in their functionality.

“Community toilet has timings. 11am to 3pm. This makes it difficult for people in the area. This is another reason for open defecation.” –FGD

“There is no community toilet in the centre region of the slum. For people here, the toilet facility is far. This is a big problem and people here do open defecation”. -ASHA

7.9 FAECES DISPOSAL METHODS IN CASE OF OPEN DEFECTION

In the household characteristics section, we discussed about one-tenth of these households (n=21) practising open defecation in the study area. Women in these households were asked how they dispose faeces after defecation and **a very large proportion (95%) said that they leave it as it is out in the open**. The other negligible 5 percent said they cover the faeces with grass or leaves. Leaving faeces



outside in the open poses challenges like environmental pollution and spread of various infectious diseases. Population in the study area require added support in widening their knowledge in safe defecation practices and its relevance in maintaining the overall health.

“Many non-educated people do open defecation and there are insects and flies in the area. It is very dirty and unhygienic.” -AWW

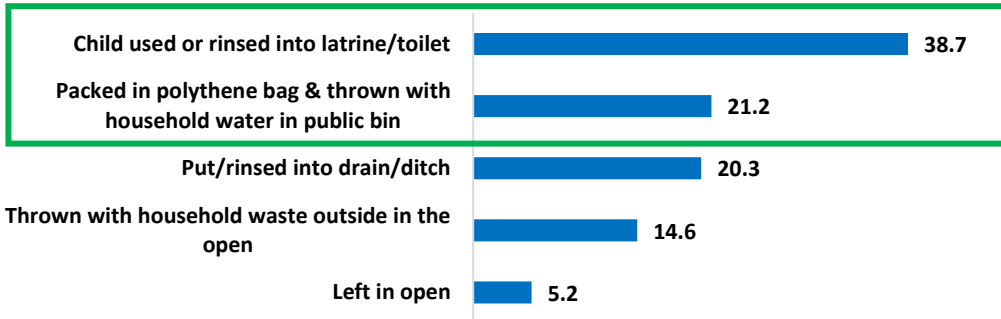
7.10 STOOL (YOUNGEST CHILD’S) DISPOSAL METHODS

Practicing improved or safe methods of disposal of children’s stool is also an important aspect in WASH practices. All lactating women and mothers, and pregnant women with children were asked about youngest child’s stool disposal methods practiced by them. Only around **60 percent of these women used safe disposal methods like disposing off in a latrine/toilet (39%) or packing it and placing in a public bin (21%)**. Unsafe methods used by these mothers were throwing it with household waste outside in the open (15%), rinsing it to a drain (20%) and leave it open (5%).



Figure 7.22 Different stool (youngest child's) disposal methods adopted by mothers (%)

[Base: All women with children, N=211]

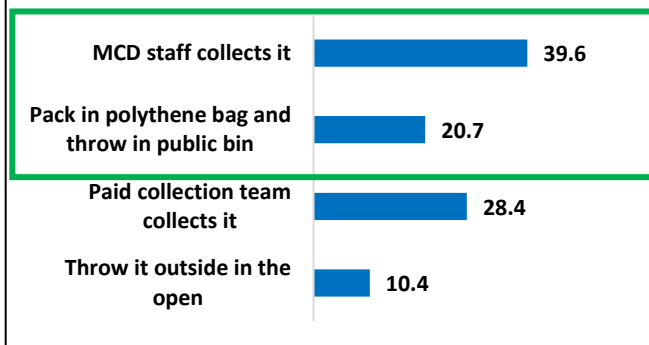


7.11 METHODS FOLLOWED FOR KITCHEN WASTE DISPOSAL

Similarly, respondent women were also asked about kitchen waste disposal methods employed by them. 60 percent of them followed safe disposal methods like packing and throwing in a public bin (21%) or packs it for MCD staff to collect it (40%). Many women mentioned paying people to collect the waste. Since survey did not explore the exact disposal method in these cases, it is regarded as an unsafe disposal method. A 10 percent of women also said they would throw the kitchen waste out in the open.

Figure 7.23 Different kitchen waste disposal method adopted by households (%)

[Base=All Respondents, N=222]



ANTHROPOMETRIC RESULTS



The anthropometric measurements of children aid in developing indicators that measure **nutritional imbalance** in children. Different states of malnourishment in children like **stunting, wasting, underweight, and undernourishment** etc. are used to interpret the overall nutritional status of the population as well. These indicators act as a guide for future intervention planning. For this purpose, measurements such as length (for children below 2 years), height (for children aged 2-5 years), weight, mid-upper arm circumference (for children aged 6-59 months) were taken. All anthropometric measures were made by trained field team members. Three readings for each anthropometric measure were taken and were recorded in the electronic data collection form. Statistical analysis of these indicators was done on Nutritional Survey module of WHO Anthro software. Anthro software had excluded outlier cases before generating various estimates. Sections ahead describe pertinent results obtained from the ***anthropometric measurements of children below 5 years of age and pregnant women in the slum area***. All the children below 5 years of age in the slum area were made part of the anthropometric measurements.

8.1 PREVALENCE OF CHILD MALNUTRITION

Stunting refers to percentage of children with low height for age (height for age < -2 SD of the WHO Child Growth Standards median)

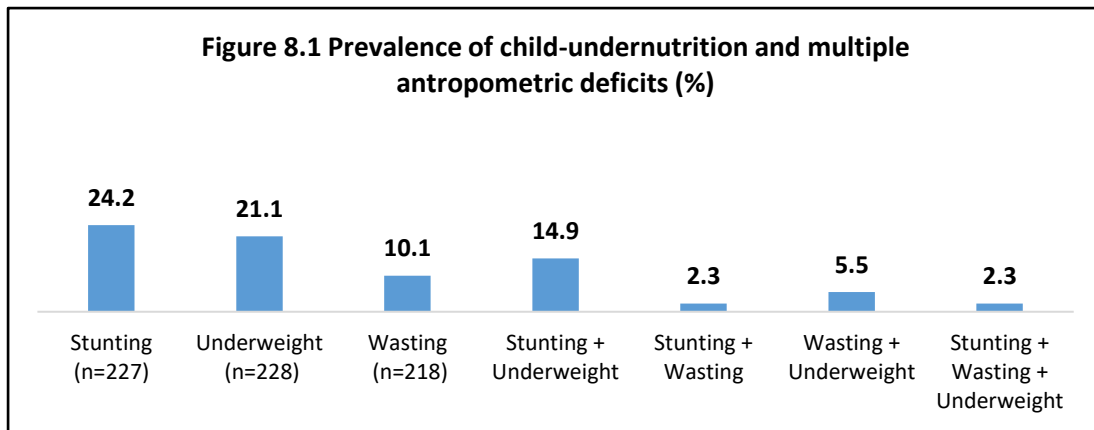
Wasting refers to percentage of children with low weight for height (weight for height < -2 SD of the WHO Child Growth Standards median).

Underweight refers to percentage of children with low weight for age (weight for age < -2 standard deviations (SD) of the WHO Child Growth Standards median).

Examination of figure 8.1 reveals the prevalence of various malnutrition states in children aged 0-59 months in the study area.

The proportion of stunted children translates into cumulative effects of under-nutrition and infections since and even before birth⁹. **A little less than a fourth of these children were found to be stunted.**

⁹ WHO, "Nutrition Landscape Information System: Definitions of Indicators of Child Anthropometry."



Wasting in children is a sign of inadequate food intake and acute infections like diarrhoea. This condition suppresses the immunity, making them susceptible to more infections¹⁰. The proportion of **wasted children in this study population is 10 percent**. Similarly, the third type of malnutrition state, underweight, in children, is a composite indicator that can reflect the states of wasting, stunting or both. According to WHO, underweight children are at a greater risk of mortality¹¹. This baseline survey found that **a fifth of the children surveyed are underweight** (95% CI estimates of these proportions are given in figure 8.4).

About 15% of the children are stunted and underweight at the same time. Another 6% percent children who are wasted are also underweight. A proportion of 2.3% children have all three states of malnutrition at the same time and thereby exhibits higher vulnerability. It is suggested that these children be identified from the study community and offered immediate nutritional support.

The distribution of pattern of various forms of malnutrition in the slum area is showcased in figure 8.2. A normal distribution graph for a nutritionally healthy child will have mean value of zero. On the contrary, these curves that depict the three measures of malnutrition in the study area has shifted towards the left and have mean values below zero reflecting the proportion of children who are stunted, wasted and underweight. This translates into the distribution of malnutrition of children in the study area where 24.2% are stunted (with mean z-score: -1.1), 21.2% are underweight (with mean z-score: -1.1) and 10.1% are wasted (with mean z-score: -0.7).

¹⁰ WHO. ib

¹¹ WHO. ib



Figure 8.2 Z-score distribution of different forms of malnutrition in children

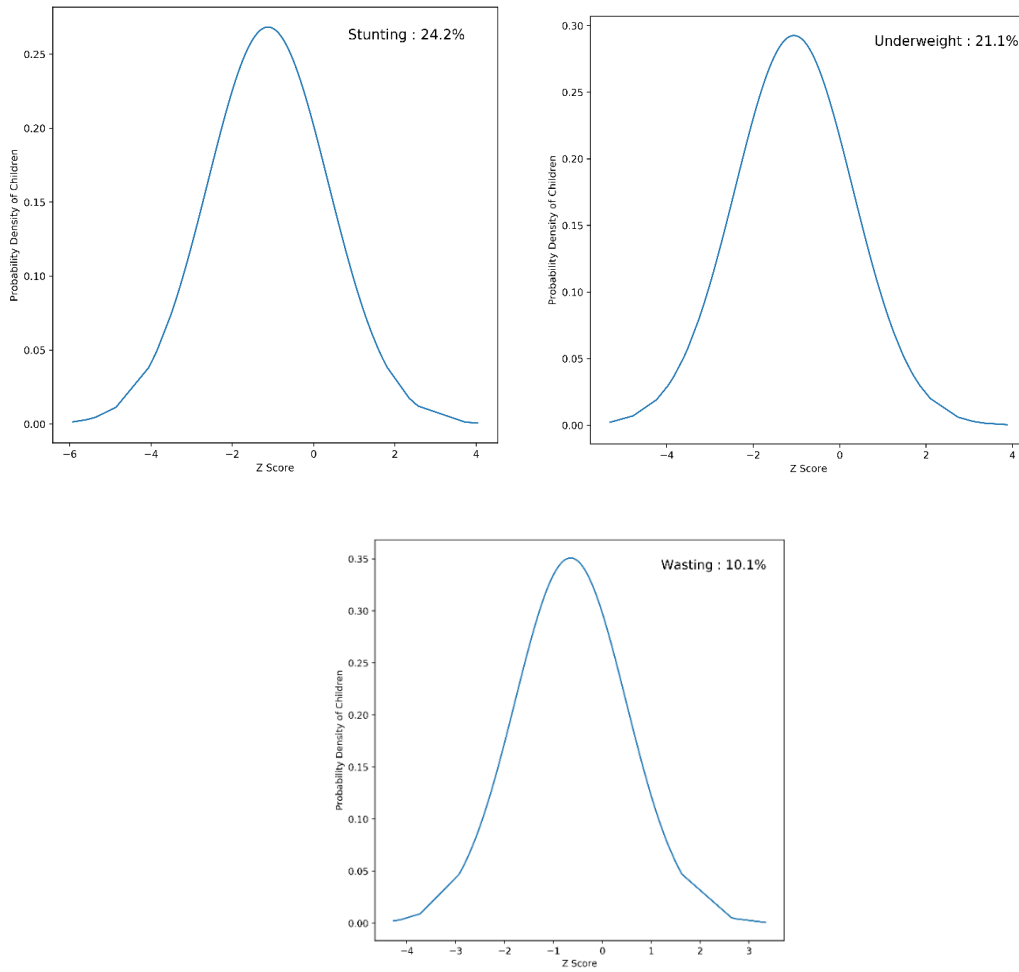
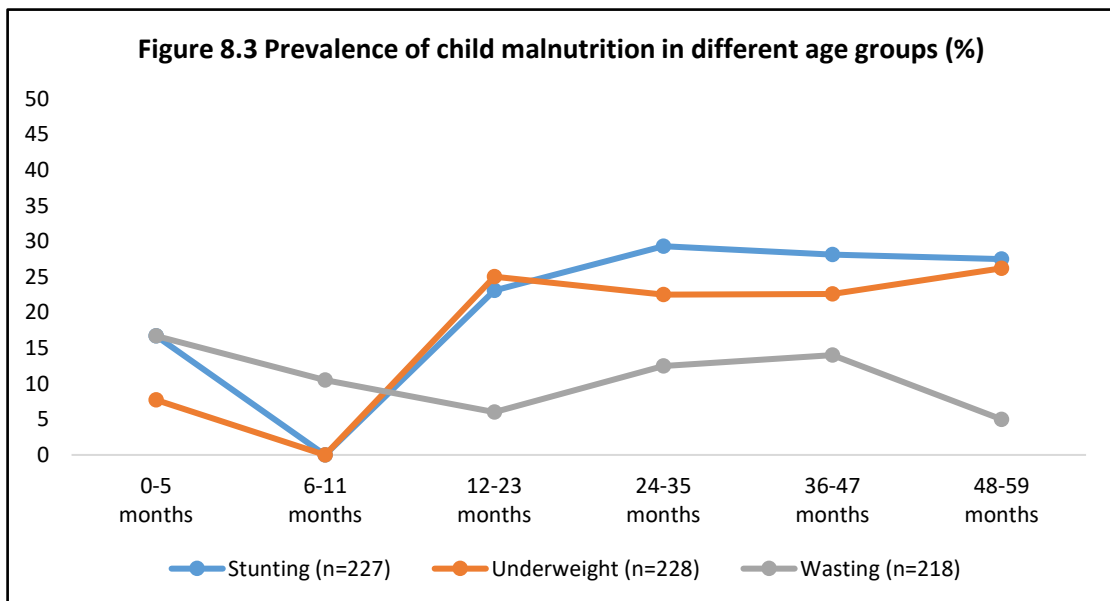



Figure 8.3 Prevalence of child malnutrition in different age groups (%)





Further, age-group wise analysis of malnutrition states as depicted in figure 8.3 reveals that **higher proportions of stunting and underweight are prevalent among children aged 12-59 months**. None of the children in the age group 6-11 months are stunted or underweight. **Wasting was most common among 0-5 and 36-47 months aged children** and was the lowest in children of 12-23 months. Gender-wise analysis of malnutrition suggests that female children are more vulnerable to stunting and underweight, whereas more male children are wasted than female children (Refer to Tables 8.1 (A) to 8.3 (A) added in the appendix).

(A). SEVERE AND MODERATE ACUTE MALNUTRITION

Malnutrition is a key cause for over two-fifth of all under-5 mortalities in India. Children in metropolitan slums like the one in the study area are at more risk due to their socio-economic profile, household food insecurity and unhealthy environment. Based on the anthropometric measurements, two composite indicators, SAM and MAM are developed to understand the extent of malnutrition in the slum area has been computed as a strategic input for intervention planning.

Severe Acute Malnutrition in children aged 6-59 months, is defined as severe wasting (i.e. weight for height less than -3 Z-scores of the WHO child growth Standard median) and/or mid-upper-arm circumference (MUAC) less than 115 mm¹².

Moderate Acute Malnutrition in children aged 6- 59 months, is defined as moderate wasting (i.e. weight for height between -3 and -2 Z scores of the WHO Child Growth Standards Median) and/or MUAC greater than equal to 115 mm and less than 125 mm.

Severe Acute Malnutrition (SAM) in children is interpreted as children with severe wasting with clinical signs of bilateral pitting oedema. It is essential to identify these children at the earliest to start appropriate treatment and rehabilitation. The proportion of SAM cases in this study population is very low. **Only 2 percent (n=4) of children is found to be suffering from SAM. Out of these 4 cases, 3 of them are male children and 3 of them belong to 2-5 years' age group.** It is suggested that these children require immediate **treatment and nutritional rehabilitation**. WHO recommends discharge of these children from treatment only when their weight-for-height is ≥ -2 Z-scores and they have had no oedema for at least 2 weeks, or MUAC is ≥ 125 mm and they have had no oedema for at least 2 weeks¹³.

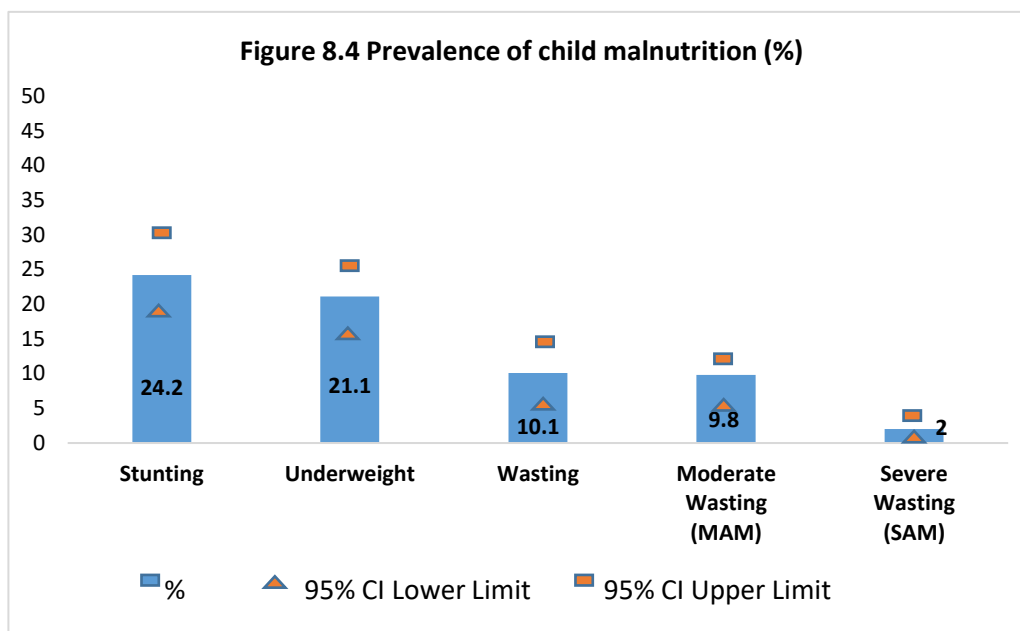
Moderate Acute malnutrition (MAM) translates into children who are moderately wasted and require immediate attention. Figure 8.6 shows **10 percent (N=20) MAM cases in this**

¹² "WHO | Identification of Severe Acute Malnutrition in Children 6–59 Months of Age."

¹³ "WHO | Management of Severe Acute Malnutrition in Infants and Children."



study area. Fifty percent of these children are females and 65 percent are 2-5 years old. Health education and financial assistance can be provided to mothers of these children to promote nutritional rehabilitation of these children and to prevent deteriorating their condition to SAM.



8.2 UNDERNOURISHMENT IN PREGNANT WOMEN

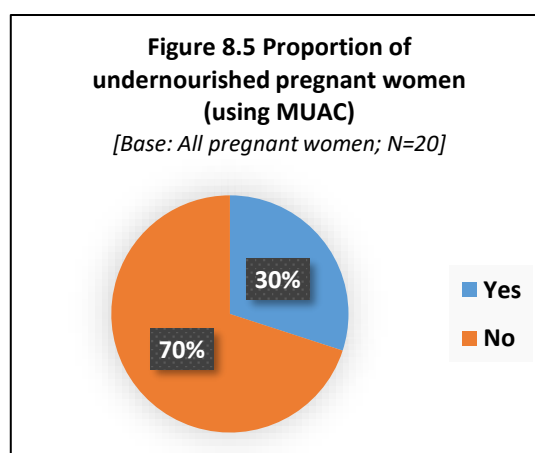
(A). UNDERNOURISHMENT IN PREGNANT WOMEN (USING BMI)

Undernourishment in pregnant women is the percentage of women with BMI below 18.5

Undernourishment of pregnant women affects self-health and the health of the foetus. This survey found only one women (5%) who is under nourished using BMI method.

(B). UNDERNOURISHMENT IN PREGNANT WOMEN (USING MUAC)

Similar to using BMI, mid-upper arm circumference (MUAC) measurement can be used to diagnose undernourishment in pregnant women. Women with MUAC measurement below 23 cm are considered to be undernourished. **The proportion of**

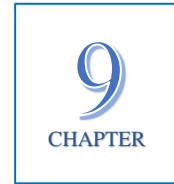




undernourished pregnant women in the sample was found to be 30 percent. These women also require immediate nutritional assistance to protect the child's and mother's health.



Conclusion



This baseline study was conducted to gauge and benchmark outcome and output indicators for the proposed project ‘Vision Healthy India: Fight Against the Silent Emergency’ to be implemented in Bhanwar Singh Camp, Vasant Vihar, Delhi. This project envisions to overcome a top health challenge of malnutrition in children of this urban slum by executing multi-sectoral interventions covering WASH, early childhood development and maternal, new-born and child health.

The target respondents for the baseline study were mothers of children aged 6-59 months, lactating women and pregnant women. The outcome indicators for the study were captured by a semi-structured questionnaire containing sections on sociodemographic details of the households and the respondents, ante-natal care coverage, infant and young child feeding practices, maternal and child health and WASH. Anthropometric measurements of under five children and pregnant women were also collected. This section attempts to summarize major findings from the baseline survey.

In the case of lactating women and mothers of children aged 6-23 months, proportion of women who initiated early breastfeeding was found to be low. A considerable proportion of mothers did exclusive breast feeding for 6 months (60%), introduced complementary feeds after 6 months (71%) and continued breast feeding at 1 year (83%) and 2 years (74%) of child’s age. Another important finding was, despite three-fourths of the children aged 6-23 months having minimum meal frequency, the proportion that had minimum dietary diversity and minimum adequate meal was about one-third. Anthropometric measurements of under five children also revealed a good proportion of them being stunted, wasted and underweight. Lack of awareness among parents, negligence of caretakers, Covid-19 and the subsequent lockdown could have led to these disturbing percentages. This finding is strengthened by the fact that around two-thirds the households in the study area could not afford food items like pre-covid times. All these indicate a need for reinforced health education and support from authorities in implementing interventions like providing nutritious food during emergency times. Added emphasis need to be on translating knowledge to recommended dietary practices.

Similarly, when it comes to maternal nutrition, very low proportion had minimum dietary diversity (38%) and consumed iron rich food (51%) the previous day of the survey. This calls for urgent attention and intervention for improving nutrition among women in reproductive age in the study area.



Antenatal care coverage is an important indicator that can appraise multi-dimensional factors like behaviour related practices, awareness level, quality of service delivery etc. Although four ANC visits coverage, receipt of 100 IFA tablets and injection of TT among pregnant and lactating women were satisfactory in this population, proportion of women who consumed 100 IFA tablets, deworming tablets and completed full ANC care during pregnancy was very low and require behaviour change interventions and strengthening of delivery of these services. Vaccinations coverage of children in this population was found to be satisfactory. But coverage of supplementation of IFA, Vitamin A and deworming was very low.

Safe and improved WASH practices have an integral role in achieving good nutritional status. In spite the respondents having acceptable awareness of illness causing factors and practicing satisfactory hand washing regime, the study found WASH services in the area being substandard. Around 40 percent population use unsafe drinking water and two-thirds utilize shared toilet facilities. An alarming 9 percent population practice open defecation. From IDIs and FGDs conducted, it is vivid that open defecation is a huge obstacle in the overall development of the community. Lack of in-house toilets, distant community toilet and other functional attributes of the community toilet like hygiene and operational timing induces people to opt for open defecation. Community engagement and extensive interventions are required in this regard as current WASH practices mandates considerable support.

It is hoped that the findings and insights presented in the report would serve as strategic inputs for designing the approach towards intended intervention; to meet the desired objectives of overall development of the slum community in health, nutrition and sanitation arenas.

* * * * *

Appendix Tables

Table 8.1 (A): Height for Age (Stunting)				
Group	Weighted N	-3SD (95% CI)	-2SD (95% CI)	z-score SD
All	227	7.9 (5.0 - 12.3)	24.2 (19.1 - 30.3)	1.49
Age group : 0-5 months	12	8.3 (1.1 - 41.7)	16.7 (4.2 - 48.0)	1.73
Age group: 6-11 months	18	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	0.95
Age group: 12-23 months	52	9.6 (4.0 - 21.2)	23.1 (13.5 - 36.5)	1.72
Age group: 24-35 months	41	7.3 (2.4 - 20.5)	29.3 (17.4 - 44.9)	1.57
Age group: 36-47 months	64	7.8 (3.3 - 17.5)	28.1 (18.4 - 40.4)	1.42
Age group: 48-59 months	40	10.0 (3.8 - 23.9)	27.5 (15.9 - 43.3)	1.21
Sex: Female	115	11.3 (6.7 - 18.6)	27.8 (20.4 - 36.8)	1.55
Sex: Male	112	4.5 (1.9 - 10.3)	20.5 (14.0 - 29.1)	1.41

Table 8.2 (A): Weight for Age (Underweight)				
Group	Weighted N	-3SD (95% CI)	-2SD (95% CI)	z-score SD
All	228	5.3 (3.0- 9.1)	21.1 (16.2- 26.9)	1.37
Age group : 0-5 months	13	0.0 (0.0- 0.0)	7.7 (1.1- 39.4)	1.20
Age group: 6-11 months	19	0.0 (0.0- 0.0)	0.0 (0.0- 0.0)	0.96
Age group: 12-23 months	52	7.7 (2.9- 18.9)	25.0 (15.0- 38.6)	1.53
Age group: 24-35 months	40	7.5 (2.4- 21.0)	22.5 (12.1- 38.0)	1.09
Age group: 36-47 months	62	4.8 (1.6- 14.1)	22.6 (13.8- 34.7)	1.62
Age group: 48-59 months	42	4.8 (1.2- 17.3)	26.2 (15.1- 41.5)	1.08
Sex: Female	116	8.6 (4.7- 15.3)	24.1 (17.2- 32.8)	1.54
Sex: Male	112	1.8 (0.4- 6.9)	17.9 (11.8- 26.1)	1.16

**Table 8.3 (A): Weight for Height (Wasting)**

Group	Weighted N	-3SD (95% CI)	-2SD (95% CI)	z-score SD
All	218	1.8 (0.7 - 4.8)	10.1 (6.7 - 14.9)	1.14
Age group : 0-5 months	12	0.0 (0.0 - 0.0)	16.7 (4.2 - 48.0)	1.51
Age group: 6-11 months	19	0.0 (0.0 - 0.0)	10.5 (2.6 - 34.0)	0.92
Age group: 12-23 months	50	2.0 (0.3 - 13.0)	6.0 (1.9 - 17.1)	1.17
Age group: 24-35 months	40	2.5 (0.3 - 15.9)	12.5 (5.3 - 26.9)	1.07
Age group: 36-47 months	57	1.8 (0.2 - 11.6)	14.0 (7.1 - 25.7)	1.14
Age group: 48-59 months	40	2.5 (0.3 - 15.9)	5.0 (1.2 - 18.1)	1.10
Sex: Female	107	0.9 (0.1 - 6.4)	6.5 (3.1 - 13.2)	1.10
Sex: Male	111	2.7 (0.9 - 8.1)	13.5 (8.3 - 21.3)	1.18