COMPLEMENTARY FEEDING: COMPREHENSIVE NUTRIENT GAP ANALYSIS OF CHILDREN (6-23 MONTHS) AND CAPACITY BUILDING OF FRONTLINE WORKER (FLW'S) OF SELECTED VILLAGE OF JAMBUSAR BLOCK IN BHARUCH DISTRICT

JUNE 2021

BHUMIKA THAKUR

B.Sc. FOODS AND NUTRITON

(Public Health Nutrition)

COMPLEMENTARY FEEDING: COMPREHENSIVE NUTRIENT GAP ANALYSIS OF CHILDREN (6-23 MONTHS) AND CAPACITY BUILDING OF FRONTLINE WORKER (FLW'S) OF SELECTED VILLAGE OF JAMBUSAR BLOCK IN BHARUCH DISTRICT

JUNE 2021

BHUMIKA THAKUR

B.Sc. FOODS AND NUTRITON

(Public Health Nutrition)

COMPLEMENTARY FEEDING: COMPREHENSIVE NUTRIENT GAP ANALYSIS OF CHILDREN (6-23 MONTHS) AND CAPACITY BUILDING OF FRONTLINE WORKER (FLW'S) OF SELECTED VILLAGE OF JAMBUSAR BLOCK IN BHARUCH DISTRICT

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTERS OF SCIENCE

(Faculty of Family and Community Sciences)

(PUBLIC HEALTH NUTRITION)

BY

BHUMIKA THAKUR

B.F.C. Sc. (Public Health Nutrition)

DEPARTMENT OF FOODS AND NUTRITION,

FACULTY OF FAMILY AND COMMUNITY SCIENCES,

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

VADODARA, GUJARAT

JUNE 2021

CERTIFICATE

This is to certify that the research work presented in this thesis has been carried out independently by

Ms. ***BHUMIKA THAKUR***

under the guidance of Dr. Hemangini Gandhi in pursuit of a master's degree in science (Family and Community Sciences) with major in foods and nutrition (Public Health and Nutrition) and represents her original work.

H. J. Gandhi

Dr. Hemangini Gandhi
Guide

Mehan

(Prof) (Dr.) Meenakshi Mehan

Head of Department

Department of Foods and Nutrition

Faculty of family and community sciences

The Maharaja Sayajirao University Of Baroda

Vadodara

Dated:

ACKNOWLEDGEMENT

For me, conducting this research has been a truly life-changing journey, and it would not have been possible without the help and advice of many people who have helped, guided or motivated me throughout the journey.

I would like to express my gratitude towards my guide Dr. Hemangini Gandhi, Department of Foods and Nutrition, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. Her incomparable expertise aids me in completing the research and thesis work. She has always supported and motivated me in the tough times during the research work. Always guided me for each and every work in the research. She was always concerned about my health and motivated me to work well and not get stressed. She has taught me more than just academics, and I intend to continue working with her wonderful ideas.

My sincere gratitude goes to Prof. Meenakshi Mehan, Head of Foods and Nutrition Department, for her invaluable support and for providing necessary facilities to carry out the research work.

I want to express my gratitude to Dean Prof. Anjali Karolia, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, for providing necessary infrastructure and resources to accomplish my research work.

I would like to show my heartfelt gratitude towards Aatapi Seva Foundation, the research was conducted with their collaboration. I would like to thank them for providing all the facilities and help which was required to conduct the study. I would like to thank Dr. Nandini Srivastava for collaborating with us to conduct necessary research work under the catchment area of Aatapi Seva Foundation. I would like to show sincere thanks towards Mrs. Jyoti Dhomse who helped me by making all the required arrangements to conduct the study.

My heartfelt thanks goes to Revti dii for making all the necessary arrangements for the research and guiding me like a friend and a mentor throughout the research. I would like to give sincere credit to all the Arogya Sathis Urmilaben, Dharmishthaben, Vidhyaben, Ramilaben, Bhavikaben, Kaushalyaben and shahina for working with me on this research and cooperating with me for all the research related work. I would like to thank Dhawalbhai and all the other staff members of Aatapi Seva Foundation for helping me to reach all the study areas and always cooperating with me for any kind of help needed.

I want to thank all the Health and ICDS staff –CDPO- Urmila ma'am, Supervisor Meenaben Medical Officer, Urvashi ma'am, ASHA workers, AWW, and AWH for their warm support and compliance. I thank the Mothers of young children (6-23 months) for their willingness to help me during my study and providing me with relevant data required for the completion of the study.

I would like to show my deep gratitude towards my friend Riddhi and her family, I am grateful for their unfaithfull help and support throughout the research. Her constant support and help was much needed for me. Thank you for having some unforgettable field work days, and being there for me anytime. For me, this journey with her has been an essential life experience.

I also want to express my gratitude to Ms. Inderdeep Kaur, my research partner and well-wisher, for assisting me with my research and being a constant support. For answering my stressed out phone calls even at midnights also and motivating me to work.

My deepest gratitude goes to all my friends who have been there with me throughout all the thick and thins. Thanks to Mohini, Hiral for being available at any point of time and for helping me with all the research related works despite of being occupied with so many other works. Our 5 years of journey will always be special to me. Thanks to Kunjan for always being my back to home partner sinse soo many years and my heartfelt thanks to Gurkiran, Ayushi for always being my one call away partners for pushing and motivating me throughout the journey. You guys were always the best part of my life thank you for being always there.

I would like to thank my family for always believing in me. Their constant support was very important to me and inspired me to work. Thanks to my brother Akshay and sister Jagruti for always being my mentors who gave me guidance since childhood. Thanks for being available every time without even asking. Your love and encouragement has always inspired me to work towards my dreams.

My warm gratitude goes to Yash for supporting me throughout the reaserch, thank you for supporting me and helping me by using your expertise. Thank you for being there during all good and bad days. I would like to give a full hearted thanks to Ashish despite of being soo far you have always motivated and supported me to work. Thank you for being my go to person and always being one call away even at midnights.

BHUMIKA THAKUR

ABBREVIATIONS

APL	:	Above Poverty Line
ASHA	:	Accredited Social Health Activist
AWC	:	Anganwadi Centre
AWH	:	Anganwadi Helper
AWW	:	Anganwadi Worker
BPL	:	Below Poverty Line
CCC	:	Core Commitments for Children
CF	:	Complementary Feeding
CNNS	:	Comprehensive National Nutrition Survey
CONGA	:	Comprehensive Nutrient Gap Analysis
FLW	:	Frontline Worker
FNG	:	Fill the Nutrient Gap
GLVs	:	Green Leafy Vegetables
HAZ	:	Height for Age
HHs	:	Households
ICDS	:	Integrated Child Development Services
IEC	:	Information Education Communication
IYCF	:	Infant Young Child Feeding
IYCN	:	Infant and Young Child Nutrition
LAZ	:	Length for Age
MAD	:	Minimum Adequate Diet
MDD	:	Minimum Dietary Diversity
MMF	:	Minimum Meal Frequency
MO	:	Medical Officer
MUAC	:	Mid-Upper Arm Circumference
NA	:	Not Applicable
NFHS	:	National Family Health Survey
NGO	:	Non -Government organization

OBC	:	Other Backward Class
PHC	:	Primary Health Center
RDA	:	Recommended Dietary Allowance
SAM	:	Severe Acute Malnutrition
SC	:	Scheduled Cast
SCs	:	Sub-Centers
SDGs	:	Sustainable Development Goals
SHG	:	Self Help Group
SNP	:	Supplementary Nutrition Programme
ST	:	Schedule Tribe
THR	:	Take Home Ration
UNICEF	:	United Nations International Children's Emergency Fund
UW	:	Under Weight
VHND	:	Village Health & Sanitation Committee
WASH	:	Water Sanitation and Hygiene
WHO	:	Word Health Organization

GLOSSARY

Animal-source foods: Foods derived from animals, such as eggs, meat (beef, chicken, and goat), and dairy products (milk, cheese, yoghurt, and fermented milk).

Annaprasan Divas: A day hosted in Anganwadis to initiate complementary feeding for children completing six months of age as a part of the ICDS program.

Complementary foods: Solid, semi-solid and soft foods (both locally prepared and commercially manufactured) provided to children between the ages of 6 and 23 months to complement breast milk.

Dietary Diversity: Dietary diversity is a measure of the number of individual foods or food groups consumed in a given period. It can reflect household access to a variety of foods and can also act as a proxy for an individual's consumption of adequate nutrients.

First foods: See complementary foods.

IYCF Practices: Infant and Young Child Feeding (**IYCF**) is a set of well-known and familiar recommendations for appropriate feeding of new-born and children under two years of age.

Malnutrition: Malnutrition refers to the deficiency of nutrients in the body that occurs mainly due to inadequate dietary intake, poor absorption of food in the body and inadequate nutrients in the body.

Micronutrient Deficiencies: This refers to deficiencies in vitamins and minerals that are a result of poor quality diet. Micronutrient deficiencies can also result from a frequent illness which may increase requirement, utilization or loss of nutrients.

Minimum Acceptable Diet (MAD): MAD combines indicators of dietary diversity and meal frequency to assess the quantity and quality of infant and young child feeding.

Minimum Dietary Diversity (MDD): Proportion of children 6–23 months of age who receive foods from 4 or more food groups during the previous day.

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.

Overnutrition: Overnutrition results from too much nutrient intake relative to nutrient requirements based on age, gender, physical activity, height, weight, and health status of the individual.

Proteins: Proteins provide the body with essential amino acids that have a range of functions: growth and development, repair or replacement of tissues, production of metabolic and digestive enzymes, and production of some hormones.

Responsive feeding: An approach of feeding where caregivers inspire children to eat, provide food in response to the child's appetite and satiety signals, and feed their children with care. Responsive feeding helps children develop healthy eating habits.

Stunting: Stunting is an indicator of chronic or long-term insufficient energy or micronutrient intake, although it has many non-nutritional causes such as helminths infestation and frequent or chronic infection. It results in a very short child (i.e. they have a very short height for their age).

Suposhan Divas: Suposhan Divas is an event organized at Anganwadi Centers on 1st Tuesday of every month to improve the nutritional status of the Mothers.

Undernutrition: Undernutrition in general terms, is an outcome of insufficient quantity and quality of food and frequent episodes of infectious disease.

Underweight: It is an indicator assessing the adequacy of weight-for-age. Underweight causes can be short-term or long-term and are challenging to define.

Wasting: Wasting is usually the result of acute or short-term insufficient food intake often combined with frequent illness—results in a dangerously thin child (i.e. they have a deficient weight for their height).

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Abstract

ABSTRACT

BACKGROUND:- The "First 1000 Days" are a period of rapid physical growth and enhanced mental development that provides a once-in-a-lifetime opportunity to create lifelong health and cognitive development. These first 1000 days of life prepare child for good health for the rest of the life.

TITLE:- Complementary Feeding: Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

OBJECTIVES:-The broad objective of the study was Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

METHODOLOGY:- It was a University-NGO collaborative study so the study was conducted in the villages which comes under working of aatapi seva foundation in Jambusar block.

Phase 1:- In phase one Jambusar block was purposively selected and the study was conducted in anganwadi centers of 5 villages where aatapi seva foundation is currently working. Total 232 children were enrolled in the study and data on Socio- economic status (HHs), Practices about Complementary feeding, Three day 24 hour Dietary Recall, Weight, Height and MUAC was collected from the mothers of children who gave consent. Also the data of following aspects were collected: District profile, Block profile, Village profile, Anganwadi Profile.

Phase 2:- In the second phase of study, pre-knowledge of frontline workers (n=31) which includes ASHA workers, and AWW of selected AWC's and Aaroga sathis of aatapi seva foundationon age appropriate complementary feeding practices using semi-structured questionnaire was taken, training module for the same was compiled from available modules of UNICEF and ICDS and training to frontline workers regarding the same was done. After the training knowledge retention of frontline workers was also elicited.

FINDINGS:- The results of the study showed Joint families accounted for 67.7% of households, while general households accounted for 48.3%. 68.5% of families were below

poverty level card. The prevalence of stunting was 48.3%, wasting was 8.6% and underweight was 24.1% (-2SD) whereas, severely underweight children were 12.9% (-3SD). Arround, 67.2% children were early initiated with breastmilk that is within one hour of birth. Breastmilk was discontinued before the age of 23 months for 20.6% of the children. The prevalence of early initiation of complementary feeding that is at the completion of 6 months of age was 47%. Arround, 3.5% children were not initiated complementary foods at the time of data collection. All of the children had a percent nutritional deficit for all micronutrients. The energy deficit in 1-2 year old children was 48.8%, compared to 13.4% in the 6-12 month age group. Minimum meal frequency, dietary diversity, and acceptable diets were found to be 51 %, 71%, and 34%, respectively.

From the total enrolled 31 Frontline workers, 41.9 percent of functionaries have completed secondary education. Frontline staff received training and three refresher trainings on various complementary feeding practises. Frontline workers' awareness of the quantity, frequency, and quality of food that should be given to children, as well as hygienic standards to be followed when feeding children, showed significant improvement.

CONCLUSION:- It can be concluded that high prevalence of undernutrition among 6-23 months children of selected villages of Jambusar block is a cause of concern. Breast feeding practices and complementary feeding practices needs to be strengthen among young mothers. Nutrient gap was found for all the micronutrients. Training module on Complementary feeding practices appeared well designed and resulted in measurable improvements in Frontline workers knowledge with regard to quality, quantity and frequency of Complementary feeding. Hence, there is a need to strengthen capacity building of Frontline workers with regard to Complementary feeding practices, interpersonal counselling and promotion of nutri agri smart communities to improve complementary feeding practices. Baseline data on Complementary feeding practices and nutrient gap analysis may be useful for Non-governmental organizations to plan further interventions to improve the Infant and Young Child Nutrition practices and dietary diversity.

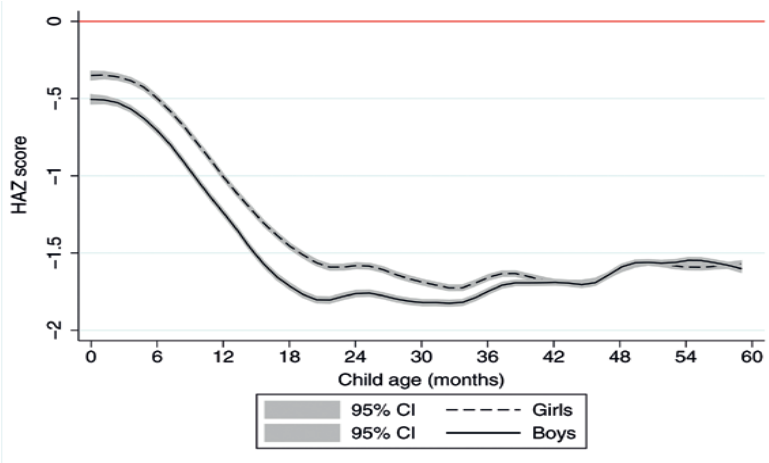
Introduction

INTRODUCTION

Every child has the fundamental right to adequate nutrition. Children who are fed enough of the right foods, in the right amounts, and at the right time in their development have a better chance of surviving, growing, developing, and learning. They are better prepared to thrive in the face of disease, disaster, or crisis. Breastfeeding and access to a wide variety of healthy foods provide children with the necessary nutrients, vitamins, and minerals they need to grow to their maximum physical and cognitive potential between the ages of 6 and 23 months – the complementary feeding period – with benefits that last long into adulthood. The complementary feeding cycle is also an important opportunity to avoid all types of childhood malnutrition, such as stunting, wasting, micronutrient deficiencies, overweight, obesity, and diet-related non-communicable diseases. **(UNICEF 2020)**

The complementary feeding period, which lasts from 6 to 23 months, is one of the most difficult periods to meet children's nutritional needs. Although children's stomachs can only carry a limited amount of food, their nutrient requirements reach a lifetime peak, leaving them vulnerable to growth failure. In most countries, reductions in height-for-age or length-for-age (HAZ or LAZ) occur mainly during the complementary feeding cycle as a result of insufficient quality and/or quantity of first foods, poor feeding habits, and increased infection rates. **(Figure 1.1)**

Figure1.1- Growth faltering in height for age (HAZ) in children coincides with the complementary feeding period

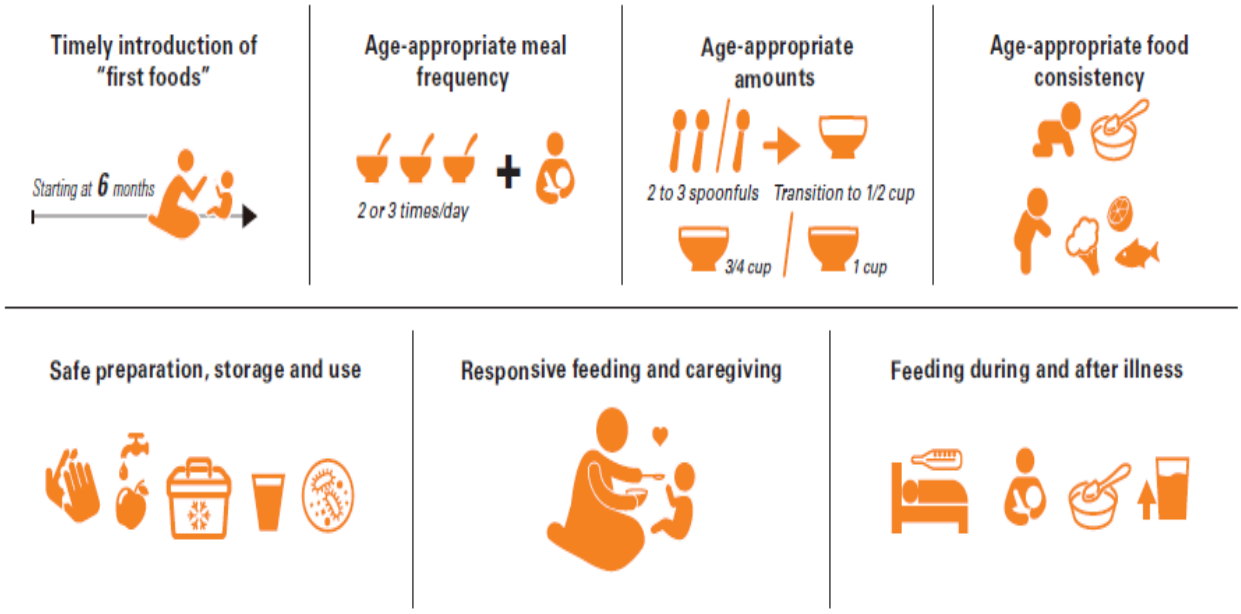


Source:- UNICEF 2020.

Adequate nutrition during infancy and early childhood is crucial for the development of each child's full human potential. It is widely understood that the time from birth to two years of age is a "critical window" for ensuring optimal growth, health, and behavioural development. Early nutritional deficiencies are linked to impairments in intellectual performance, work capacity, reproductive outcomes, and overall health during adolescence and adulthood in the long run. As a result, the malnourished girl child is more likely to give birth to a malnourished, low-birth-weight infant when she grows up, reinforcing the malnutrition cycle. The primary proximate causes of malnutrition during the first two years of life are poor infant feeding practises combined with high rates of infectious diseases. **(WHO 2005)**

Age-appropriate complementary feeding practises are depicted in the **Figure 1.2** below. After 6 months, implement first foods gradually, beginning with 2 to 3 spoons per day and gradually increasing to 1/2 cup per day and finally 1 cup per day. First Foods are semi-solid and solid foods.

Figure 1.2-When and how children should eat

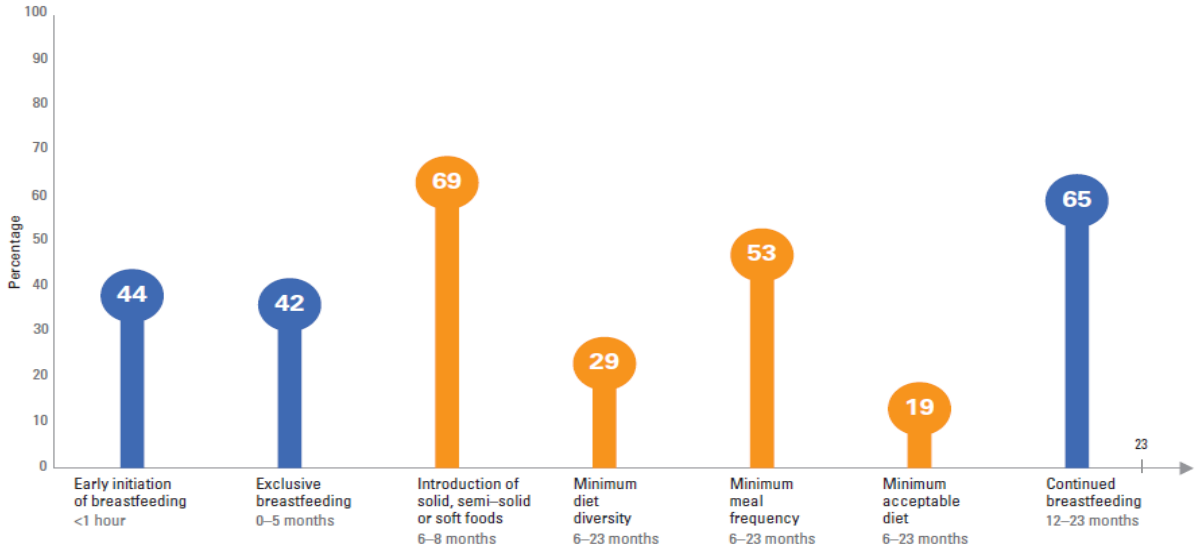


Source:- UNICEF, 2020.

Data on Dietary practices of young children (6-23 months) are present graphically in Figure 1.3

Globally, only 19% of children (6-23 months) are getting a minimum acceptable diet. We can see that 69% children (6-8 months) were introduced of solid, semi-solid or soft foods. Whereas, only 29% of children (6-23 months) receive minimum diet diversity.

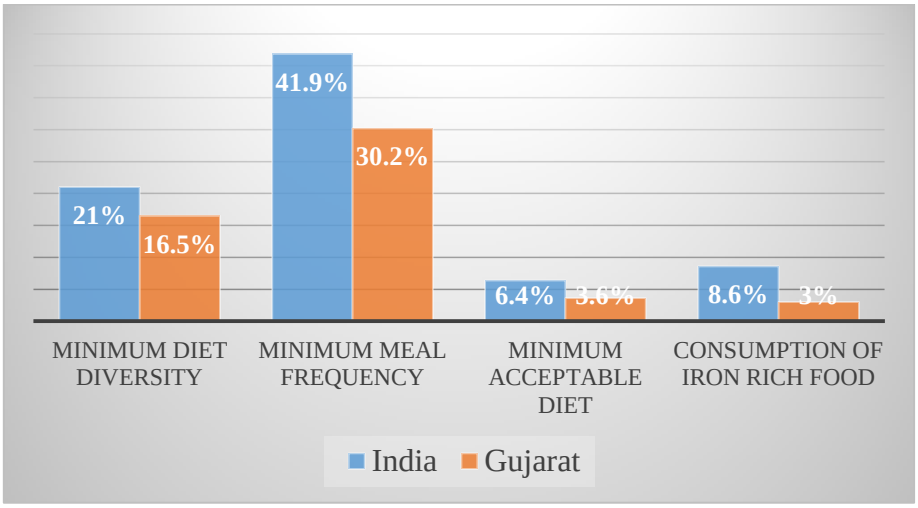
Figure 1.3-Percentage of children benefitting from the recommended infant and young child feeding practices



Source: -UNICEF, 2019

As per CNNS (2016-2018) survey data, we can see there is low percentage of children (6-23 months) having minimum diet diversity (consumption of minimum 5 food groups out of 8 food groups) and minimum meal frequency (consumption of minimum number of meals in a day). Whereas, very low percentage of minimum acceptable diet (combined indicator of minimum duet diversity and minimum meal frequency) and consumption of iron rich foods can be seen among children (6-23 months) for India and Gujarat both. **(Figure 1.4)**

Figure 1.4-Percentage of children aged 6–23 months receiving MDD, MMF, MAD, and Iron-rich foods



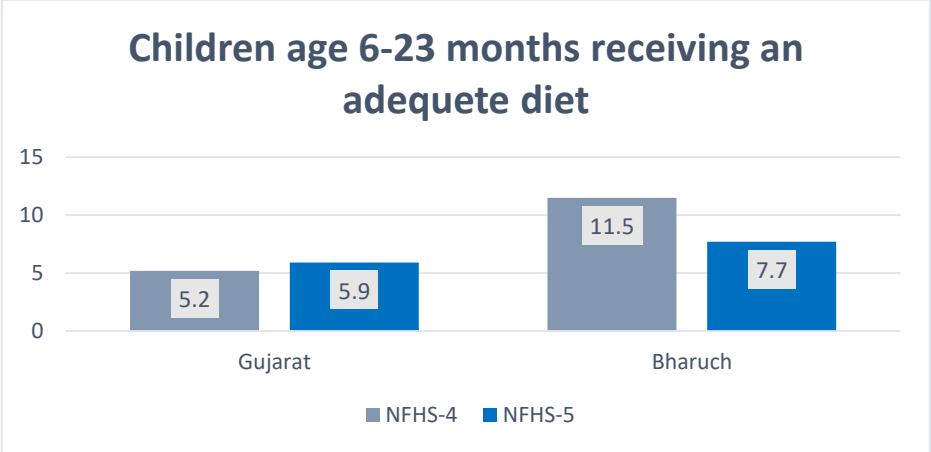
Source:- CNNS(2016-2018)

To address undernutrition, adequate complementary feeding from six to 24 months is needed, as well as continued breastfeeding. In India, optimal breastfeeding combined with complementary feeding practises will prevent 20% of infant deaths under the age of five. **(Lancet - 2004)**

NFHS-5 data for Gujarat and Bharuch on minimum adequate diet is presented in Figure 1.5

Here the NFHS-5 data shows that only 5.9% and 7.7% of children receive minimum adequate diet for Gujarat and Bharuch respectively. Whereas, NFHS-4 data of India shows that only 9.6% children has received minimum acceptable diet.

Figure 1.5-Percentage of children age 6-23 months receiving an adequate diet



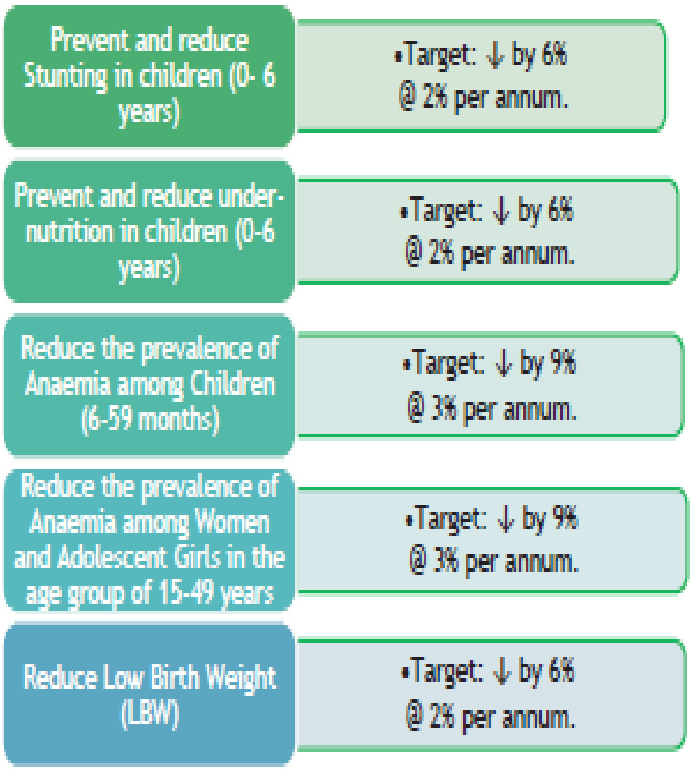
Source:- NFHS-4 & NFHS-5

National Programmes for Improving the situation

India's flagship initiative, POSHAN Abhiyaan 2018 (National Nutrition Mission), aims to enhance nutritional outcomes for infants, pregnant women, and lactating mothers. Recognizing that India's malnutrition levels are high and have remained stable over the last decade, this national nutrition mission aims to address five key elements that have been identified as critical in the fight against malnutrition: delivery of high-impact interventions with adequate coverage, continuity, intensity, and quality (C2IQ), including large-scale behaviour change communication.multi-sectoral convergence to address the root causes of malnutrition, adequate resources and tracking to track progress and learn, and dedicated leadership and an enabling environment are all required. Stunting, wasting, anaemia, and low birth weight can take years to affect, but improvements in these vital elements that can drive progress on the path to healthy nutrition can be done in shorter timeframes. (POSHAN Abhiyan report 2019)

Targets of POSHAN Abhiyan is presented in figure 1.6

Figure 1.6- Targets of the Poshan Abhiyaaan



Source:- Poshan Abhiyaan 2019

Fill The Nutrition Gap (FNG)

Improved nutrition situation analysis can enhance understanding of the possible extent and key causes of the nutrient gap within a specific target group in a given context, such as children under the age of two or pregnant and lactating mothers. The World Food Programme has created the "Fill the Nutrient Gap" (FNG) system for improved nutrition situation analysis and decision making, with input from the University of California Davis, International Food Policy Research Institute, Epicentre, Harvard University, Mahidol University, Save the Children, and UNICEF. It aims to promote identification of strategies to improve nutrient intake. **(Bose et al. 2019)**

The FNG analysis contributes in a greater understanding of the current state of nutrition because it:

(a) Concentrates on the food intake side of the malnutrition system, examining the nutrient intake of various target groups in depth;
(b) To characterise barriers to nutrient intake, linear programming is combined with secondary data to understand the availability, cost, and affordability of healthy diets for households and target groups with higher nutritional needs, as well as model potential interventions to improve them;
(c) It connects nutrition situation analysis to decision-making by providing decision-makers with evidence to direct their strategies;
(d) It enables an utilisation of context-specific interventions (both nutrition specific and sensitive) to improve the nutrition situation through food, health, and social security systems by facilitating multi sectoral discussions on barriers to nutrient intake.

Comprehensive Nutrient Gap Analysis (CONGA)

GAIN and **UNICEF 2020** has come up with Comprehensive Nutrient Gap Analysis report. As per the report, nutrient requirements for an infant after the first six months exceed what breastmilk alone can supply. Along with breastfeeding, babies should be exposed to nutrient-dense firm, semi-solid, or soft foods at six months of age to satisfy growing nutrient requirements and ensure proper growth and development. Despite this, only 21% of infants and young children aged 6–23 months in India eat a diet that includes the required number of food groups, rising their risk of micronutrient deficiency and growth halting.

Identifying food and nutritional gaps during the complementary feeding phase is important for guiding strategies and services aimed at enhancing infant health and nutrition. However, nationally representative results for young children are typically only available for a few foods and are obtained infrequently. Alternative sources of information, even if of poorer quality, may help fill data gaps, particularly where different sources point to the same nutrients of concern or dietary concerns. Given the broad variety of indicators used, the variability of data sources and demographic patterns, and variations in the severity of related health effects, policy makers have no clarity about how to find and assess information to identify the extent and importance of nutritional gaps in infant diets.

The researchers then used local and United States Department of Agriculture (USDA) food composition tables, as well as data on household food intake and food prices in India, to identify the most nutrient-dense, locally accessible food sources of key problem nutrients based on nutrient quality and local availability. The micronutrients which commonly deficient in diets of young children are:-

a. Iron
b. Vitamin-A
c. Zinc
d. Vitamin-B12
e. Folate
f. Calcium
g. Niacin
h. Iodine
i. Vitamin-B1
j. Vitamin-B6
k. Vitamin-C

Findings from nationally representative and high-quality sub-national studies, grey literature, and journal papers on infant and young child feeding habits, micronutrient shortages, dietary intake, household use and spending, and food availability were analysed and summarised. The literature was reviewed to assess the burden of gap and the certainty of available evidence for 11 micronutrients typically deficient in the diets of young children.

COMMUNITY ENGAGEMENT

The inclusion of local health system users and community partners in all aspects of policy, planning, administration, and implementation of health care services is known as community engagement. Community participation is an important part of successful population health management since it ensures that programmes are tailored to the needs and beliefs of the community. Community participation, according to the World Health Organization, is "a method of building partnerships that allow people to work together to solve health-related problems and encourage well-being in order to achieve positive health effects and outcomes."

Improved feeding practises for infants and young children have the ability to increase child growth and development in India. Anganwadi Workers, who serve on the front lines of India's national nutrition supplementation scheme, are crucial in supporting baby and young child feeding activities in the city. **(Chaturvedi, et al. 2014)**

The importance of community involvement in improving the nutritional diversity of children aged 6 to 23 months' complementary eating activities is critical. Evidence from randomised clinical trials conducted in and outside of India shows that using women's organisations as a forum for implementing health and wellness interventions is a viable strategy with particular requirements. (**Sethi et al., 2017**)

It is a public health priority to promote balanced complementary feeding through behaviour change approaches. Most research undertaken around the world tended to concentrate on the effects of behavioral management strategies on the adequacy of complementary diets, rather than the timing of initiations. **(Abiyu and Belachew 2020)**

UNICEF 2020 in the report on Core Commitments for children in Humanitarian actions discussed the eight commitments to enable improvement in nutritional status.

For Nutrition, the revised Core Commitments for Children describe eight commitments to enable that: Children, adolescents, and women have access to diets, services and practices that improve their nutritional status in humanitarian crisis:

- Leadership and coordination
- Information systems and nutrition assessments
- **Prevention of stunting, wasting, micronutrient deficiencies and overweight in children aged under five years**
- Prevention of undernutrition, micronutrient deficiencies, and anaemia in middle childhood and adolescence
- Prevention of undernutrition, micronutrient deficiencies, and anaemia in pregnant women and breastfeeding mothers
- Nutrition care for wasted children
- System strengthening for maternal and child nutrition
- **Community engagement for behaviour and social change**

In view of the above, the present study was planned with the following Rationale and Objectives.

RATIONALE

- Regional data on CONGA is scarce and needs to be generated for planning of cost effective interventions to improve IYCN.
- Poor complementary feeding practices is a cause of concern and needs to be improved through multiprong strategies including interpersonal counselling of Mother's of young children.
- Effective community engagement can lead to improved complementary feeding practices.

BROAD OBJECTIVE

- Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district

SPECIFIC OBJECTIVES

- To assess socio- demographic profile of households of children (6-23 months)
- To document complementary feeding practices of children (6-23 months)
- To document the utilization of services of Annaprasan diwas under ICDS programme by the mothers of children(6-23 months)
- To document the compliance of Balshakti supplied under ICDS programme.
- To calculate the CONGA for selected macro and micro nutrients based on ICMR RDA 2020.
- To strengthen the capacity of front line workers (AWWs, ASHAs and aarogya sathis of NGO) for effective counselling on age appropriate complementary feeding practices.
- To assess knowledge of FLWs on complementary feeding before and after trainings.
- To collect feedback from FLWs regarding change in complementary feeding practices if any at community level after counselling by them.

Review of Literature

REVIEW OF LITERATURE

Breastfeeding and infant and young child feeding practises that are optimal are vital to a child's life, wellness, nutrition, and development. India has made improvements in early breastfeeding within the first hour after birth and exclusive breastfeeding from birth to six months. However, complementary feeding is often delayed and insufficient in both quality and quantity. **(Arun Gupta and Neelima Thakur, 2018)**

Identifying and interpreting dietary nutrient gaps is critical for improving inadequate diets and reducing malnutrition. Evidence of the burden of nutritional deficiencies and insufficient nutrient intake or availability exists in many countries, but it is often misinterpreted or underutilised in decision making. There is no clear guidance about how to synthesise and analyse the relevant data, which comes in a variety of types. To address this analytical void, the Comprehensive Nutrient Gap Assessment approach was developed, which allows the use of established evidence to determine the public health importance of nutrient gaps and identify evidence gaps. **(Beal et. al. 2021)**

The focus of this chapter is on the available literature in relation to complementary feeding practises in children aged 6-23 months and identifying dietary gaps in selected villages of Jambusar block in Bharuch district.

The broad objective of the present study is Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

The literature is compiled under the following subtitles:

1. Knowledge and practices about complementary feeding practices

2. Dietary Practices of children 6-23 months

3. The magnitude of undernutrition among children 6-23 months

4. Capacity building of functionaries and its impact on IYCN practices

5. Nutrient Gap during complementary feeding phase

KNOWLEDGE AND PRACTICES ABOUT COMPLEMENTARY FEEDING PRACTICES

Global scenario

A cross-sectional community study was carried out in Ethiopia in 2017. According to the findings of this report, 104 (40%) of mothers/caretakers had overall awareness and practises of complementary feeding, while 156 (60%) did not initiate complementary feeding on time. More than half of the caregivers or mothers in the study area did not start complementary feeding on time; the key explanation for this was a lack of expertise and a perception of insufficient breast milk production. A high proportion of children aged 6-23 months did not receive the minimum dietary diversity recommended by the World Health Organization. Furthermore, the intake of animal source foods, vitamin A-rich fruits and vegetables, and other fruits and vegetables was low among the children interviewed. **(Neme K, et al. 2017)**

Yonas et al. in 2015 conducted a community based cross sectional study in Ethiopia. Out of a total of 417 respondents, 338 (81.1%) had adequate knowledge of IYCFPs, while 79 (18.9%) had insufficient knowledge. As according IYCF indicators, 283 (67.9%) of children under the age of 24 months were fed incorrectly, while 134 (32.1%) were fed correctly. The study found that inappropriate IYCF practices was common in the study region. The study revealed that a large number of mothers gave pre-lacteal feeding, discarded colostrum, and used a nipple bottle for feeding.

A study was conducted in 2014 in rural areas of Moramanga and Morondava districts in Madagascar, by **Rakotonirainy NH et al.** to assess the dietary diversity among children of 6-59 months. The diet data gathered was used to create multiple WHO-based dietary practise indicators for children aged 6 to 23 months. The results showed, early breastfeeding initiation (within 1 hour of birth) was prevalent in Moramanga at 53.5%. Within one hour of birth, approximately 24.0% of children in Morondava were breastfed. Breastfeeding up to the age of 12 months was very common in both study sites: 98.5 % of Moramanga children and 87.6 % of Morondava children were already breastfed on the day before the survey. Overall, nearly half of the children in both sites had an adequate minimum diet. Children aged 12 to 17 months had the highest proportion: 65.1 % in Moramanga and 47.8 % in Morondava. It began to decline at the age of 18 months. The drop was most noticeable in Morondava, where only 24.8 % of

children aged 18–23 months had an adequate minimum diet. Iron-rich foods were consumed by 48.1 % of Moramanga children and 57.3 % of Morondava children. Children between the ages of 12 and 17 months ate the most iron-rich foods, 54.7 % in Moramanga and 63.5 % in Morondava. Morondava had a higher proportion of children who ate iron-rich foods than Moramanga.

Aguayo in 2015 conducted the survey and study evidence available to describe existing complementary feeding practises for children aged 6–23 months in South Asia, as well as the efficacy of IEC approaches aimed at improving complementary feeding in this age group. The results revealed that South Asian complementary feeding activities are far from optimal. Less than 3 in 5 infants (57.4 %) aged 6–8 months are fed soft, semisolid, or solid foods, meaning that at least 2/5 of children begin complementary feeding late. Furthermore, fewer than half of children aged 6–23 months are fed on a daily basis at a minimum frequency, and only around one-third are fed diets that reach a minimum diet diversity. Complementary foods for children aged 6–23 months are predominantly cereal based diets that lack the necessary growth promoting nutrients offered by fruits and vegetables (only one in every three children aged 6–23 months is fed fruits and vegetables) and foods of animal origin (less than one in every five children is fed meat, fish, poultry, and/or eggs).

Domestic scenario

In a cross-sectional analysis by **Karmee et al.** in **2017** with mixed methodology (quantitative approach augmented by qualitative method in-depth interview) was conducted with 374 respondents. In this research, infant and young child feeding practises were found to be suboptimal. Almost half of the respondents demonstrated insufficient and improper IYCF practices.

In a regional analysis by **Dhami et al.** in 2019, the findings revealed a large variation in the prevalence of introduction of solid, semi-solid, or soft foods (complementary foods) among infants aged 6–8 months in regional India, with the South (61%) having the highest prevalence and the Central and Northern regions having the lowest (38%). Similarly, the South had the highest minimum dietary diversity (MDD) and the lowest in the Central region (12 %).

Minimum meal frequency (MMF) and minimum suitable diet (MAD) differed significantly across regions. The factors associated with complementary feeding practises varied across Indian regions as well. Higher household wealth index for the implementation of complementary foods in the North and Eastern India; higher maternal education for MMF and MDD in the North and Central regions were significant modifiable factors associated with complementary feeding practises. Improving complementary feeding practises in India will necessitate national and sub-national efforts that targeted vulnerable mothers, such as those with no schooling and few health-care contacts.

A research was carried out in selected blocks from three tribal districts of Maharashtra: Amravati, Gadchiroli, and Nandurbar. According to the findings of this report, the majority of children (65%) were introduced to top feeding between the ages of six and seven months, which is the recommended age for top feeding initiation. Though delayed top feeding was observed in one-fifth of the cases (20%). Delayed top feeding initiation was found to be mostly correlated with mothers' own values, myths, and, in some cases, child illness, child refusal to eat, and mothers' lack of awareness about top feeding initiation. According to WHO and UNICEF indices, only 13.3 % of children were fed the recommended amount of times. Fruits were completely absent from the diet. Instead, more than half of the children were given fast food, while 14 were given tea. The overall picture showed that, although the majority of mothers were ignorant of proper feeding practises for meeting the nutritional needs of their children. Top feeding strategies were discovered to be inadequate in terms of underfeeding and a lack of a nutritionally healthy diet in the children surveyed. **(Marathe and Yakkundi, 2017)**

In an urban environment, **Sabreena, et al.** in 2019 conducted a cross-sectional analysis of complementary feeding practises among mothers with children aged six months to two years. This research was carried out to assess mothers' awareness of complementary feeding, to examine complementary feeding practises, and to identify the factors affecting the inappropriateness of complementary feeding. The study found that while the majority of mothers were well-versed in breast feeding and complementary feeding, the optimal activities they practised were found to be very low.

Regional data

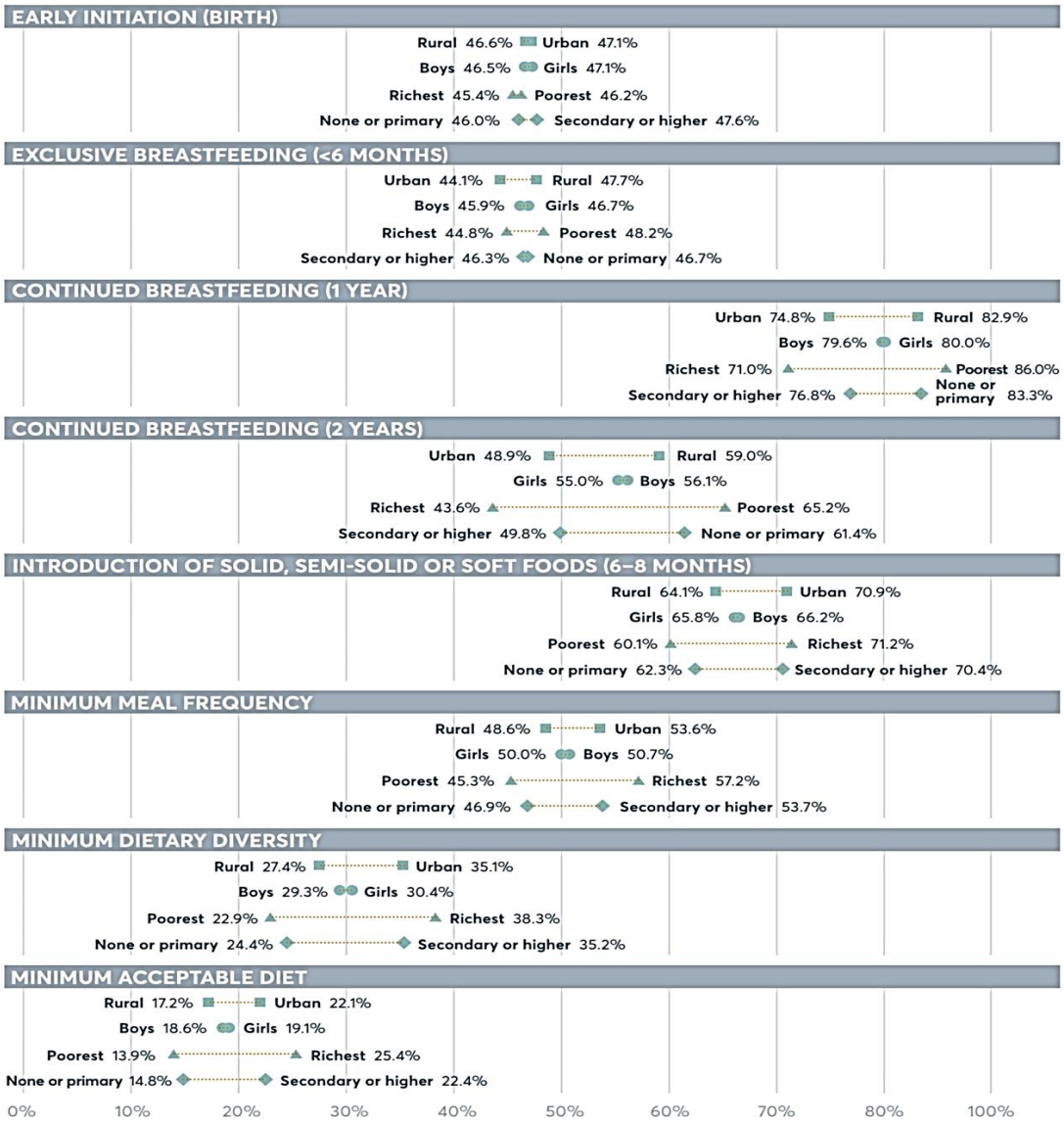
In 2017, **Gandhi and Patni** conducted research in the rural blocks of Vadodara, where 72% of lactating mothers reported the correct age for starting complementary feeding. According to the author, more than 80% of the mothers continued breastfeeding as well as complementary feeding. 49% of children were fed half a cup at a time, and 38% of children ate three to four times a day. 64 percent of mothers practised hand-washing before preparing food, 44% of mothers washed their hands after cleaning their child's faeces, and 50% of mothers washed their hands before feeding the child.

A cross-sectional study was carried out among 250 mothers from Vadodara's Waghodiya Taluka who had at least one child under the age of two. According to the mothers, the most common reasons for implementing complementary food were "inadequate breast milk" and "poor child development." Cow's milk emerged as the most common food item to begin complementary feeding. Just 21.2 percent of mothers followed the ideal mix of food products for complementary feeding. A total of 58% of mothers fed their children less than times per day. When mothers were questioned about hygiene maintenance, the most popular response (33%) was clean vegetables, followed by clean kitchen (27 %). A total of 95% of mothers agreed to continue breast-feeding if they had a fever, and 91% agreed to continue breast-feeding if their infant had a fever. **(Trivedi et al. 2015)**

DIETARY PRACTICES OF CHILDREN 6-23 MONTHS

UNICEF 2019 has summarised various indicators on Infant and young child feeding practices at global level which is presented in **figure 2.1**. It can be interpreted that globally, exclusive breastfeeding and continuation of breastfeeding till 2 years is better in urban areas as compared to rural. However, Minimum acceptable diet is much lower in rural as compared to urban areas.

Figure 2.1-Inequalities in infant and young child feeding indicators by urban–rural location, sex, wealth and maternal education



Source:- UNICEF 2019

Global scenario

In 2016, a community-based cross-sectional analysis was conducted in rural Aleta Wondo. To recruit 502 children aged 6–23 months, multistage sampling was used. DD was determined by asking the mother if the index child had obtained food from the regular seven food groups the day before. According to the study's findings, children aged 6–8 months were served solid, semisolid, or soft foods less than half of the time (41.5% of the time). Between one and two years, a significant proportion of children (81.7%) continued breastfeeding (68.9%). Just 13.6 percent of infants and young children received iron-rich or iron-fortified foods. Vast majority (89.2%) of children aged 6–23 months were breastfeeding at the required age. The mean (SD) DDS of the children the day before was 2.5 (0.9), and only a small proportion met the DD minimum requirement. The most widely consumed food groups were grains, roots, and tubers (89.0%) and milk and milk products (72.5%). Likewise, eggs (21.5%), vitamin A-rich fruits and vegetables (21.5%), legumes (17.1%), other fruits and vegetables (11.8%), and flesh foods (3.4%) were less commonly eaten. More than three-fourth (77.9%) of the children consumed solid, semisolid, or soft foods the minimum recommended number of times or more the day before. Less than one-tenth (8.6 percent) of the children met the minimum adequate diet- a combination of minimum DD and minimum meal frequency. **(Karisa Dafursa and Samson Gebremedhin, 2019)**

In 2018, Stratified random sampling was used in Indonesia by **Aripin Ahmad et al.** to select 392 children aged 6-23 months for a cross-sectional analysis. Interviews were used to gather socio-demographic information. Interviews and the repeated 24-hour food recall tool were used to obtain CF habits, which included the timely implementation of CF, the minimum meal frequency, dietary diversity and the minimum acceptable diet, and the intake of foods high in proteins and vitamin A. According to the findings, 39 percent were exclusively breastfed, 61 percent received sustained breastfeeding, and 50 percent were introduced to Complementary Food on time. Minimum meal frequency was met by 74% of subjects, but dietary diversity and minimum acceptable diet were only met by 50% and 40% of the children, respectively.

In 2016, a health facility-based cross-sectional study was conducted by **Solomon et al.** in Addis Abeba's three sub-cities. The 352 study participants or mothers with children aged 6–23 months were sampled using a multi-stage sampling technique. The dietary diversity measured using a 24-hour recall procedure revealed that 59.9 % (95 % CI: 54.7–65.3) of the children had received the

minimum dietary diversity. Grain, roots, and tubers were the most commonly consumed food items 24 hours before the survey, consumed by 326 (92.6 %) of the children, followed by dairy products (249). (70.7%). However, the consumption of flesh food or organ meat was low; only 54 (15.3 %) of the total children consumed flesh food. The intake of minimum dietary diversity was found to be high among children aged 6 to 23 months in this study. Even though this study showed a better outcome, further effort is needed to meet the recommended minimum dietary diversity intake for all children aged 6 to 23 months.

Taha et al. conducted a cross-sectional analysis in 2020 which revealed Three-quarters of the children (72.2%) were first exposed to Complemenatary Feeding between the ages of 6 and 9 months. The majority (71.4 %) consumed four food groups, which corresponds to the recommended minimum diet diversity. In total, less than half (47.3 %) of the children met the minimum meal frequency standards, with non-breastfed children aged 6–23 months being the least compliant (21.9 %) (p 0.001). Sugary snacks were provided to a large number of children. In total, 36.2 % of children aged 6 months had a minimum acceptable diet.

A stratified multistage sampling protocol was used to sample 433 children aged 6–24 months in this cross-sectional analysis conducted in southwest Ethiopia in 2019. Demographic, socioeconomic, and dietary data were collected using a semi-structured questionnaire. A 24-hour dietary recall was used to calculate the dietary diversity score. In the research area for infant and young child-feeding practises The majority of the children (88.9 %) were exclusively breastfed, and 75.6 % were breastfed up to the age of two years. Both early and late introduction of complementary food was widely practised in the study region, but the majority (82.9 %) of mothers began giving complementary food to their children only at 6 months. The majority of the children (83.9%) did not receive the minimum dietary diversity. Dietary diversity was found to be higher in children aged 12–24 months, whose birth order was first, and whose parents were formally educated. **(Forsido et al. 2019)**

Domestic scenario

Chaudhary, et al. conducted a community based cross-sectional study of children aged 6–36 months in Ahmedabad's urban slums of Girdharnagar ward in 2015. According to the findings Breastfeeding was started in just 38.3 % children within 1 hour, 28.6 % within 24 hours, and 33% after 24 hours. 54.8 % of children were given colostrum, and 60.5 % were given prelacteal

feeds. Just 19.1 % of the children were breastfed for two years or more, 35.6 % for six to twelve months, 30.4 % for twelve to twenty-three months, 14.3 % for six months or less, and 26.2 % were bottlefed. In 64.3 % of the children, meal frequency was adequate. 15.7% of the children received dietary diversity from more than four food groups.

In 2018**, Srivasatava G et al.** conducted a 6-month hospital-based cross-sectional prospective analysis at a referral treatment centre in Lucknow, India. Results showed in 95 % of non-breast-fed infants, adequate milk feed frequency was observed. It was 100 % in the 18-24 month age group. It was discovered that 69 % of children began complementary feeding on time. The minimum meal frequency in breastfed and non-breastfed children was 60% and 69%, respectively, and the minimum dietary diversity was 60% for all age groups. The CFI (Complementary Feeding Index) was seen to be low in 32%, medium in 61% and high only in 7% children. In the group in which complementary feeding was just started i.e. in the age group of (6 months to 11 months) the CFI score was low only in 11% but in the 18-23-month group it was low in 57%.

A cross-sectional community-based study was conducted by **Sandhya Rani Javalkar** in 2019 among mothers with children in Mangalore Taluka, Karnataka. Data was gathered through personal interviews with 408 mothers using a predesigned and pretested questionnaire. In both urban and rural areas, indicators such as exclusive breast feeding under 6 months (47.8 % in urban and 45.6 % in rural), introduction of solid and semisolid foods (90.0 % in rural and 92.0 % in urban), and minimum meal frequency (83.3 % rural and 81.9 % urban) were remarkably similar. Early breast feeding initiation (50 % in rural and 42.8 % in urban), and continued breast feeding (60.4 % in rural and 50.7 % in urban) were higher in rural areas than in urban areas. In both regions, indicators such as minimum dietary diversity (21.3 % in rural and 37 % in urban) and minimum acceptable diet (20% in rural and 31.9 % in urban) were low.

The most recent nationally representative, cross-sectional data from the National Family Health Survey (NFHS-4, 2015–16) was used for analysis of 73,852–74,038 children aged 6–23 months. Consumption of 21 food items, seven food groups, and Adequately Diversified Dietary intake (ADDI) was collected through mother's 24-h dietary recall. Overall, the mean dietary diversity score was low (2.26; 95% CI:2.24 2.27) and the prevalence of ADDI was only 23%. Interventions designed to improve food consumption and diversified dietary intake among Indian children need

to be universal in their targeting given the overall high prevalence of inadequate dietary diversity and the relatively small differentials by SES. (**S. Agrawal et al. 2019)**

Regional data

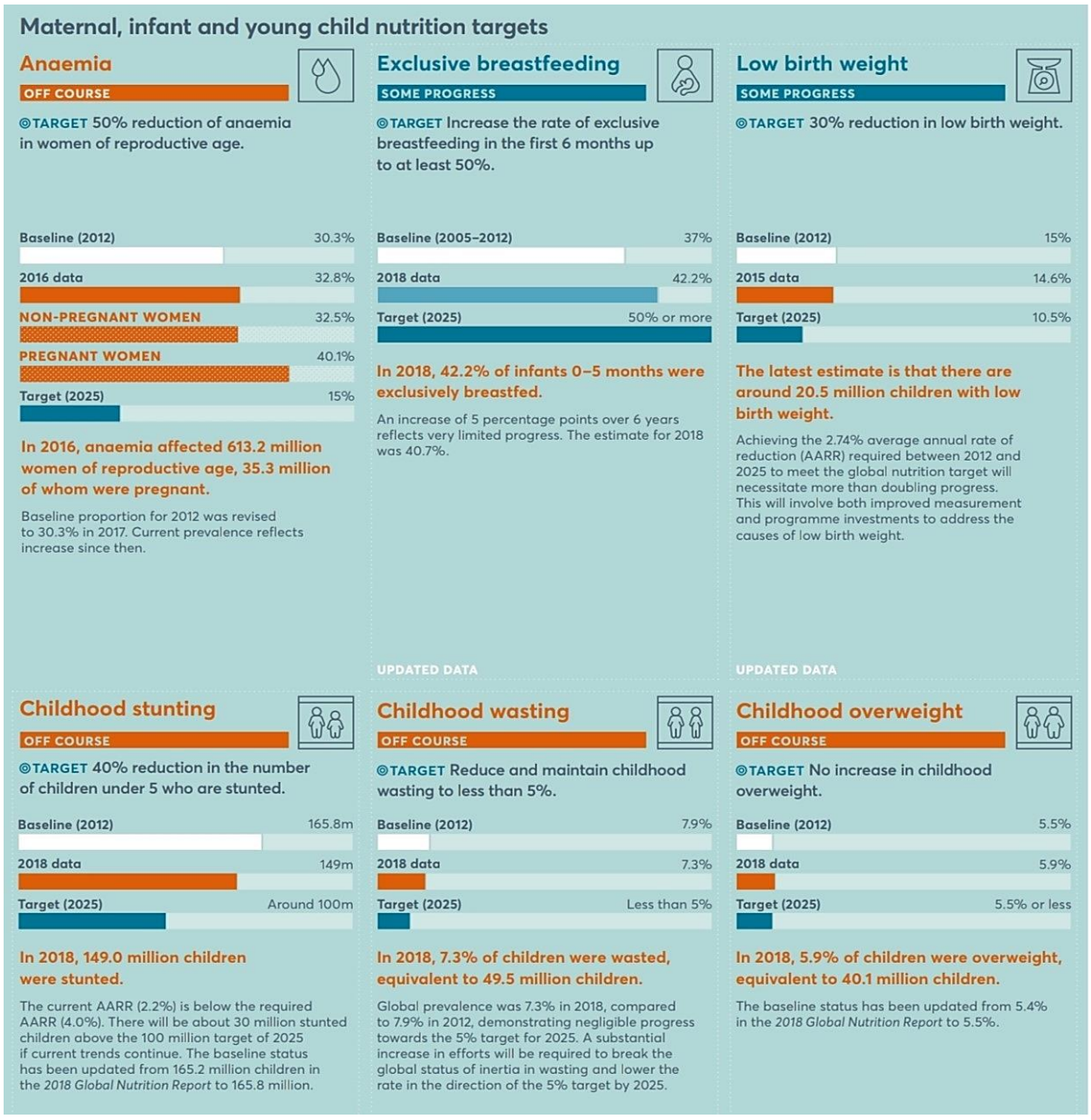
A descriptive cross-sectional research on 300 eligible mothers with children aged 0–23 months in Dabhoda, Gujarat, revealed that all mothers of children aged 12–23 months continued breast-feeding up to 2 years. At six months, 59.8 % children began complementary feeding. Just 28.3 % of children were fed from four or more food groups (MDD), 95.6 % had an minimum meal frequency (MMF), and 28.3 percent had a minimum acceptable diet (MAD). **(Chandwani et al., 2015)**

A community-based mixed-method study has been carried out among 253 children aged 6-23 months in the Narmada -aspirational district of Gujarat. Dietary practices of enrolled children were elicited through a one-day 24-hour recall method. There were a total of 253 young children participating in the study, 38.3 % of whom were fed from more than four food groups, 68.1 % of whom had a minimum meal frequency, and 30.6 % of whom had a Minimum Acceptable Diet (MAD). According to the report, grains, roots, and tubers contributed the most (84%) to the highest inclusion of food group in complementary foods. Non-dairy animal source foods were the least inculcated in complementary foods, followed by less than half of other fruits and vegetables. Dietary habits of infants and young children aged 6-23 months were discovered to be deplorable. **(Gandhi and Mehta, 2021)**

THE MAGNITUDE OF MALNUTRITION AMONG CHILDREN 6-23 MONTHS

Global program towards the global nutrition targets 2025 is presented in **figure 2.2**. It can be seen that exclusive breastfeeding rates as per 2018 is 42% and we need to achieve 50% by 2025.

Figure 2.2-Global progress towards the 2025 global nutrition targets



Source:- Global nutrition report 2020

Global scenario

In Indonesia, **Ahmad et al.** (2018) conducted formative research. A cross-sectional research involving 392 children aged 6 to 23 months was conducted. They reported the percentage of children that were underweight (26.3 %), wasting (22.5 %), and stunted (22.5 %) (27.8 %). Underweight and stunting were more prevalent among boys aged 12-23 months, while wasting was more prevalent among females aged 6-11 months.

Abera et al., 2019 gathered cross-sectional data from 1,525 children ages 6–23 months. In the study, child undernutrition was classified as MUAC -2 z-score, with MUAC -3 z-score defining severe undernutrition. According to the findings, the burden of undernutrition in northern Ethiopia was 13.7%, with 43 children suffering from severe malnutrition. According to the study's findings, male children bear a greater burden of malnutrition than female children. The authors came to the conclusion that males' mean MUACZ score values were consistently lower than girls' across all age categories.

White et al. in 2017 represented that inadequate amounts and consistency of complementary foods, as well as poor eating practises, endanger children's health and nutrition. Interventions to enhance complementary feeding are vital to reducing all types of malnutrition, and having access to data to determine the status of complementary feeding activities is critical for efforts to improve feeding behaviours. The complementary feeding cycle is a window of opportunity for preventing all types of malnutrition, including stunting, wasting, being overweight, and being obese. Children's first foods and feeding experiences are important not just for their immediate survival but also for their long-term potential.

In 2014/15, a community-based cross-sectional research was conducted in **Eskezyiaw Agedew and Tefera Chane** among 562 women with children aged 6 to 23 months in Kemba area. Out of 562 questioned mothers-child pairs, 18.7 %, 95% CI (15.6–22.1), and 25.8 %, 95 % CI (20.8–31.4) boys and 12.5 %, 95 % CI (8.5–16.0) girls had chronic undernutrition. The prevalence of mild stunting was 10.4 %, with a 95% CI of 7.9–12.9. There was moderate chronic undernutrition among all boys (14.4 %; 95% CI (10.2–18.6) and moderate chronic undernutrition among all girls (6.8 %; 95% CI (3.9–9.7). The prevalence of severe stunting (HAZ 3 Z-score) was 8.4 %, with a 95 % CI (6.1–10.7). Boys were more affected than girls in the overall scenario. The number of stunted boys was greater than the number of stunted girls.

Mutuku J. N. et al. carried out a research to establish the impact of maternal knowledge on child feeding and complementary practises on the nutritional health of children aged 6-23 months in a Kenyan pastoral community. According to the findings, almost one-fifth of the children (21.8%) were wasted, with more boys (25.5%) being wasted than girls (17.4 %). Overall, 26.0 percent of the children were stunted, with boys being stunted at a greater rate (31.8%) than girls (17.4%). A similar pattern was seen for underweight children, with 25.5 %, 29.1% of boys and 21.0% of girls being underweight.

Domestic scenario

In this prospective cross-sectional research conducted by **Srivasatava G et al.** over the course of six months, 256 mothers were surveyed at a referral care centre in Lucknow. The following WHO anthropometric nutritional status indices were calculated: weight-for-age, length-for-age, and weight-for-length, all represented in standard deviation (SD) units (z-scores). In the sample, 24% of the children were stunted (length for age LAZ -2SD), 38% were underweight (weight for age WAZ -2SD), and 35% were wasting (weight for length WLZ -2SD).

Ahmad I et al. conducted a research which was a cross-sectional community-based investigation. It was conducted on enrolled families from the Urban Health Training Centre and Rural Health Training Centre, Department of Community Medicine. In the research study, the prevalence of stunting was 45.7 % (95% CI - 40.1%, 51.1%); moderate stunting was 33.7% (95% CI - 28.8%, 39%); and severe stunting was 12% (95% CI - 8.8% , 16%). The prevalence of stunting was shown to be substantially related to dietary diversification (OR - 0.17, 95% CI - 0.10–0.29).

According to the study, dietary diversification is a strong predictor of stunting. To reduce the burden of stunting among new borns and young children, measures targeted at enhancing dietary diversity should be implemented.

Regional data

A cross-sectional study was carried out in the city of Vadodara. A total of 514 children were enrolled in the study, and mothers were interviewed about their family background, breastfeeding and complementary feeding practises, including commonly and traditionally consumed complementary foods, immunisation, morbidity profile, anthropometric and dietary parameters for their children. The prevalence of underweight was 32.3%, stunting was 40.2%, and wasting was

24.7%. Malnutrition was substantially more prevalent in the ICDS setting. Poor dietary diversity in complementary foods was seen in children from poorer socioeconomic backgrounds, increasing their risks of being malnourished. **(Kantawala S. and Shah E. 2019)**

From July to October 2015, **Chaudhary et al.** performed a cross-sectional research in Ahmedabad's Girdharnagar ward. Anthropometric measures were performed as needed, and nutritional indicators were computed. Almost 65.2 % of the children were stunted, 43.3 % were underweight, and 11.9% were wasted.

A community-based mixed-method study was conducted on 253 children aged 6-23 months in the Narmada District, one of Gujarat's aspirational districts. Data on the District profile, Block profile, Village profile, and Socio-Economic Status of enrolled children's households were acquired. Young children's height, weight, MUAC, and nutritional information. According to the findings, the prevalence of stunting in young children was 44.1 %, wasting was 21.1 % with less weight for height, and 33.9 % of children were underweight. **(Gandhi and Mehta, 2021)**

CAPACITY BUILDING OF FUNCTIONARIES AND ITS IMPACT IN IYCN PRACTICES

Global scenario

A study by **Sanghvi et al.** (2017) discussed about how to design and administer behaviour modification interventions to improve complementary feeding habits. Bangladesh, Malawi, Peru, and Zambia were the four initiatives that matched the selection criterion of scale and demonstrable benefits. They looked for similarities and contrasts in the design and execution of social and behavioural change methods, as well as the usage of programme delivery platforms, problems faced, and lessons learned. All four programmes reported increases in dietary diversity as a result of their different strategies. The study's findings suggest that complementary feeding practises, particularly dietary diversity, can be rapidly improved in a variety of settings using existing programme platforms if interventions focus on specific barriers to food access and use effective strategies to encourage caregivers to prepare and feed appropriate foods.

Domestic scenario

A cluster-randomized study in Andhra Pradesh found that improving macronutrient consumption in both intervention groups without providing additional supplemental meals enhanced macronutrient intake, although micronutrient deficits persisted. It was also demonstrated that community-based educational programmes can improve dietary consumption. **(S.Vazir et al. 2013)**

Mukherjee A, et al., conducted a community based cross sectional study in Durgapur, West Bengal, India, between December 2016 and January 2017 among 216 people using a dietary diversity questionnaire in rural and urban field practise areas. The study indicated that a dietary variety awareness campaign should be created to educate individuals about the importance of dietary diversity. Optimum nutrition is required from infancy onwards for proper growth and development. Increasing the diversity of meals and food types in the diet aids in ensuring optimal nutritional intake.

A research study was conducted where exploratory mix-methods approach was used to investigate coverage of women's nutrition services between July 2014 and March 2015. A capacity assessment tool was created to map all sorts of community collectives and evaluate their knowledge, institutional, and programme ability as a sponsored stakeholder for delivering women's nutrition services/behavior promotion. The results showed Women Self-Help Groups can become direct grantees for expanding the reach of women's nutrition initiatives in these tribal districts/pockets if they are trained and monitored properly. **(Sethi et al. 2017)**

K. Mallikharjuna Rao, et al., 2010 (9 states of India) in their study highlighted the need for necessary steps for more **community participation** in various developmental programmes for removal of poverty and improve literacy rate among females. The study also concluded that **Health and Nutrition Education** has to be **strengthened** through department of health and **ICDS**, to bring awareness and behavioral change for better health and nutrition practices to improve the nutritional status of mother and child.

Regional data

Gandhi and Shah 2020 through her review paper revealed that there is a decreasing trend in the incidence of undernutrition and anaemia in children, as well as an improvement in the status of IYCN practises in Gujarat. Concerns arise about its speed, since we need to meet new Rashtriya Poshan Abhiyan objectives by 2022. The report emphasises the importance of state-specific successful implementation and use of key government programmes, as well as community engagement, in order to meet the aims of the Rashtriya Poshan Abhiyan and the SDGs in general.

Infant and young child feeding practises that are improved have the potential to improve child growth and development outcomes in India. **A Chaturvedi et al.,** carried out a research to examine Anganwadi Workers' knowledge of infants and young child feeding practises, as well as their capacity to counsel and encourage caregivers on these practises. The evaluation results revealed that Anganwadi Workers knew more about infant and young child feeding practises such as breastfeeding initiation, pre-lacteal feeding and colostrum, age of introduction of complementary foods, portion size, and feeding frequency than domains that appeared to have a direct bearing on practises. There was a significant gap between Anganwadi Workers' knowledge and their ability to use it in official counselling sessions with caregivers. During counselling, there was a general lack of empathy with caregivers, a disregard for taking children's feeding histories, poor active listening skills, and an inability to deliver need-based suggestions. To summarise, a paradigm shift in training is essential to enable greater engagement between Anganwadi Workers and caregivers on baby and young child feeding practises, with communication processes and counselling skills being fundamental to the training.

Gandhi and Rathi (2018) conducted a study in urban Vadodara with the overarching goal of engaging community and grassroot level functionaries to deliver key nutrition and dietary interventions to improve knowledge, practises for optimising weight through improved home diet, and utilisation of available public health services by unmarried adolescent girls aged 15 to 19 years. This is one of the few studies that investigates the feasibility of a community engagement method utilising Mahila Aarogya Samiti members in urban slum areas in delivering essential nutrition/health messages to unmarried teenage girls. The findings indicate that it may offer a feasible solution if further efforts by authorities such as frequent orientation, supportive monitoring, and recognition of functionaries with incentives are explored.

NUTRIENT GAP DURING COMPLEMENTARY FEEDING PHASE

Global scenario

Identifying and understanding dietary nutritional gaps is critical for improving poor diets and lowering malnutrition. In many nations, evidence demonstrating the impact of dietary deficiencies and inadequate nutrient intake or availability exists, yet it is frequently misconstrued or underutilised in decision making. Insight into nutrient gaps and evidence gaps is critical for making suggestions on how to enhance diets and consequently a population's nutritional status. Evidence indicating the burden of dietary deficiencies or inadequate nutrient intake or availability is widely available in nations, but it is frequently misconstrued or underutilised in decision-making. The CONGA offers a systematic strategy to using this information to help decision makers understand what policies, initiatives, and research are needed to improve diets. Furthermore, CONGA data may be utilised to feed subsequent analyses to investigate the root reasons of nutrition gaps, such as a lack of availability, accessibility, price, attractiveness, or understanding of healthy foods rich in critical nutrients. **(Ty Beal et al. 2021)**

Micronutrient deficiency is a major cause of illness and death in millions of South Asian children. Understanding the individual micronutrients deficient in the diet during the supplementary feeding phase is critical for correcting undernutrition induced by poor diets. A Comprehensive Nutrient Gap Assessment was performed to synthesis varied data, evaluate the public health importance of complementary-feeding micronutrient shortages, and identify evidence gaps in eight South Asian nations. There were significant iron, zinc, vitamin A, folate, vitamin B12, and, to a lesser extent, calcium and vitamin C deficiencies throughout the region. Liver, tiny fish, eggs, ruminant meat, and dark leafy greens are the most nutrient-dense whole-food sources of these micronutrients. Some nations require investment to obtain data on micronutrient biomarkers and dietary intakes. A food systems strategy is required to improve child diets and reduce malnutrition, which impacts millions of children, their prospects, and society as a whole across South Asia and beyond. **(Ty Beal et al. 2021)**

Breast-fed infants and young children require complementary foods with a high nutritional density (especially iron and zinc), especially between the ages of 6 and 12 months. Low-income countries, diets, on the other hand, are typically dominated by cereal-based porridges with low nutritional density and poor mineral bioavailability. Complementary feeding diets are frequently deficient in iron and zinc, as well as other minerals. These nutritional adequacy gaps in baby meals are thought to have been a feature of human diets since the agricultural revolution 10,000 years ago. Estimates of nutrient intakes prior to that point, based on hypothetical diets of pre-agricultural humans, suggest that infants had much higher intakes of essential nutrients than is true today, and would have been able to meet their nutrient needs from a combination of breast milk and pre-masticated foods provided by their mothers. In modern times, strategies for ensuring appropriate nutrition for newborns and early children must confront the difficulty of satisfying nutritional demands from mostly cereal-based diets. **(Kathryn G. Dewey. 2013)**

Dewey and vitta, in 2014 obtained that children under the age of two have a high nutritional requirement to sustain growth and development.Since breastfed infants normally eat only a limited amount of food other than breastmilk, complementary foods must be extremely nutrient dense.In fact, cereal-based porridges with low nutrient density dominate infant diets in low-income populations.The presence of phytate in grains and legumes exacerbates the problem by reducing iron, zinc, calcium, and phosphorus absorption.Most complementary food diets would be deficient in iron and zinc unless excessive quantities of animal-source foods are consumed on a regular basis.

Chessa K. Lutter and Juan A. Rivera's 2020 studied on suggested breast-feeding and complementary feeding habits, as well as access to the proper quality and quantity of meals, are critical components of good nutrition for infants and young children aged 6 to 24 months. In Bangladesh, Ghana, Guatemala, Mexico, and Peru, complementary food diets are lacking in iron, zinc, and vitamin B-6. Iron deficiency is consistent with the high frequency of anaemia found in this age range. The adequacy of observed calcium, vitamin A, thiamin, folate, and vitamin C intakes is determined by the age range under consideration and the set of needs utilised in the evaluation.

In 2020, **Jabri et al.** performed a research to investigate the nutritional intakes and complementary feeding practises of children aged 6–24 months of Bangladeshi ancestry residing in Tower

Hamlets, London, and to explore the feasibility of a larger, population-representative research. The findings revealed that the average protein consumption (39.7 g/day, SD 18.2) was greater than RNIs for all age groups (P = 0.001). Vitamin D consumption was lower than recommended (P = 0.006) in the 12–24-month age group. Zinc consumption was lower than recommended for children aged 10–12 months (P = 0.028). Iron and zinc intakes were lower than recommended for the 6–9-month combined age group (P = 0.021 and P = 0.002, respectively). Initial findings suggested that children of Bangladeshi ancestry may not be reaching nutritional requirements; consequently, a future intervention targeted to the needs of the Bangladeshi community may be necessary to enhance parts of complementary feeding habits and nutritional status.

The researchers **Kavian et al.,** analysed data from mothers and infants who took part in the NOURISH and South Australian Infant Dietary Intake (SAIDI) trials. Anthropometric data, newborn feeding methods, and three days' worth of infant food intake data were gathered at birth and again when the infants were 4-8 months old. Usual energy intakes were higher than estimated needs for babies aged 4–6 months (2764 kJ vs. 2505 kJ) and 6–8 months (2857 kJ vs. 2601 kJ), as were mean protein intakes for babies aged 4–6 months (14 g vs. 10 g) and 6–8 months (2857 kJ vs. 2601 kJ) (18 g vs. 14 g). Infants who were formula-fed solely or mixed-fed had greater carbohydrate and protein consumption than infants who were entirely breastfed. Increased protein consumption may lead to fast weight gain in this population. These findings are critical in understanding the impact of early diet on later health and weight status.

Abeshu et al. review suggestions shows Breastfeeding gives the best nutrition for the first six months of life. When breast milk is no longer adequate on its own, complementary feeding begins, with a target age of 6–23 months. With age, the nutritional gap between what is required and what is received from breast milk widens. At 6–8, 9–11, and 12–23 months, complementary foods are anticipated to provide 200, 300, and 550 kcal per day, respectively. Furthermore, the complementary foods must contain significant amounts of micronutrients such as iron, zinc, phosphorus, magnesium, calcium, and vitamin B6. In many regions of the underdeveloped world, complementary feeding remains a barrier to proper nutrition in children.

Feyisa et al., conducted a research to assess the sufficiency of calorie and micronutrient intake from complementary foods in children aged 6–23 months, as well as to define current feeding practises in Southern Ethiopia. From February to March 2016, a community-based cross-sectional

investigation was undertaken. 190 mothers/primary caregivers of children aged 6–23 months were recruited using simple random selection. A repeated interactive multiple-pass 24-hour recall survey was utilised to measure children's food and nutrient consumption. Animal sources, fruits, and vegetables were scarce in complementary foods. The majority of children (94.7 %) ingest grains, roots, and tubers. 71 (37.8 %) of children ingest vitamin A-rich fruits and vegetables. Iron-fortified foods are consumed by a very small percentage of children (1.6 %). The anticipated demand from complementary foods is exceeded by the median protein consumption. Except for vitamin B2 and B6, children aged 9–23 months consumed less calories and micronutrients than recommended by the World Health Organization (WHO).

N. F. Butte et al. conducted a cross-sectional study of a nationwide random sample of US children aged birth to 47 months. A telephone-administered, multiple-pass 24-hour dietary recall was used to determine usual nutritional intakes from meals, drinks, and supplements. Typical nutritional intakes met or surpassed energy and protein needs while posing no danger of vitamin and mineral deficiency. Except for iron and zinc in a small sample of older infants and vitamin E and potassium in toddlers and preschoolers, the normal intakes of antioxidants, B vitamins, bone-related minerals, and other micronutrients were adequate compared to the Adequate Intakes or Estimated Average Requirements.

Fisher et al. investigated the accuracy of infant and toddler energy intakes using a single, telephone-administered, multiple-pass 24-h recall vs 3-d weighed food records. Intakes based on three-dimensional weighted food records were within 5% of predicted energy requirements. The 24-h recall overestimated energy intake by 13% among infants (740 ± 154 and 833 ± 255 kcal, respectively) and by 29% among toddlers (885 ± 197 and 1140 ± 299 kcal, respectively) as compared to the 3-d weighed food records. Macronutrient and micronutrient intakes were greater with 24-hour recall than with a 3-day weighted food record. Dairy and grains provided the greatest energy to the diet, accounting for 74% and 54% of the overestimation in infants and toddlers, respectively.

Forsido et al. conducted a cross-sectional investigation which showed Only 16.1% of children receive the recommended amount of dietary diversity. Cereals and grains (68.8 %), discretionary calories (53.6%), protein-rich meals (44.6%), oils and fat (40.5 %), vegetables (38.5%), dairy products (17.9 %), and fruits were reported to be provided to the children (28.1%). Total

carbohydrate, crude fat, protein, energy content, calcium, zinc, and iron content ranged from 4.3–24.4%, 0.9–8.5 %, 8.2–11.9%, 27.9–162.6 Kcal/100 g, 168.4–250.4 mg/100 g, 1.8–4.1 mg/100 g, and 22.5–42.4 mg/100 g, respectively. All of the complementary food samples that were primarily offered to children lacked appropriate protein, fat, carbohydrate, energy, and calcium as suggested for complementary feeding. However, the majority of complementary foods include appropriate amounts of iron and zinc.

Domestic scenario

Data on Foodstuff and Nutrient consumption by 1-3 years old children

Here, the data presented below from NNMB shows that for rural Gujarat from 2001 to 2012 there has been a minimal increase in g/day consumption of cereals and pulses by 1-3 years old children. We can also see some increase in g/day consumption of fats & oils. Whereas, there is gradual decrease in g/day consumption of other food groups such as millets, green leafy vegetables, other vegetables, milk and milk products and sugar.

If look into the data of tribal Gujarat we can see that they have maximum g/day consumption of millets followed by cereals, milk and milk products, other vegetables and pulses among 1-3 years old children.

Table2.1- Average Intake of Foodstuffs (g/day) 1-3 year of children (Gujarat)

Foodstuff	**Rural**			**Tribal**
	2001-02	**2005-06**	**2011-12**	**2008-09**
Cereals	51	44	66	43.8
Millets	61	78	57	144.4
Pulses	13	7	19	25.3
GLV's	3	3	2	1.8
Other vegetables	12	16	9	30.6

M&MP	82	103	60	41.1
Fats and oils	3	6	10	6
Sugar and jaggery	16	4	13	5.7

Source:- National Nutrition Monitoring Bureau (NNMB) Rural and Tribal Data

Here, the data on per day nutrient consumption of 1-3 years old children for rural Gujarat shows that from 2001 to 2012 there has been increase in protein, fat, energy, iron, vitamin-A, thiamin and niacin. Whereas, there is decrease in per day intake of calcium and vitamin-C.

The data of tribal Gujarat shows among 1-3 years old children there is high intake of energy, protein, thiamine and vitamin-C as compared to rural Gujarat.

Table 2.2-Intake of Nutrients (per day) 1-3 year of children (Gujarat)

Nutrients	**Rural**			**Tribal**
	2001-02	**2005-06**	**2011-12**	**2008-09**
Protein(g)	19.1	17.8	21.5	29.2
Fat(g)	12	10	18.2	15.2
Energy(kcal)	658	536	734	935
Calcium(mg)	215	194	182	162
Iron(mg)	6.5	6.5	7	7.1
Vitamin-A(µg)	78	64	92	75.3
Thiamin(mg)	0.5	0.4	0.6	0.9

Niacin(mg)	3.8	3.3	4.4	6
Vitamin-C(mg)	12	7	9	17

Source:- National Nutrition Monitoring Bureau (NNMB) Rural and Tribal Data

Iron, vitamin A, zinc, vitamin B12, folate, and calcium are micronutrients of concern during the complementary feeding phase in India, according to existing information. There is presumably significant regional heterogeneity in nutritional gaps at the subnational level, which has not been studied. The consequences of deficits in micronutrients of concern, as well as the explanations for their classifications, are briefly outlined here.

Table.2.3 Nutrient gaps and evidence ratings for children 6–23 months in India

	Iron	Vit A	Zinc	Vit B_{12}	Folate	Ca	Niacin	Iodine	Vit B_1	Vit C	Vit B_6
Gap burden	High	Mod	Mod	Mod	Mod	Mod	Mod	Low	Low	Low	None
Evidence certainty	High	High	High	High	High	Mod	Low	High	Low	Low	Low

There is substantial evidence of substantial iron, vitamin A, zinc, vitamin B12, folate, and calcium deficiencies in young children's diets in India during the complementary feeding period (6–23 months). **(CONGA. 2020)**

A hospital-based cross-sectional investigation was carried out at two different private hospitals. The study included 200 women with children aged six months to two years who were visiting the paediatric outpatient departments of the above mentioned institutions for growth monitoring, immunisation, and minor illnesses such as upper respiratory tract infections. According to the findings, only 32% of mothers provided an acceptable amount of complementary feeding. However, only the site of delivery was substantially linked with the practise of providing a suitable quantity of complementary feeding. **(Rao S et al. 2011)**

Regional data

A cross-sectional study was conducted in urban Vadodara. The results showed mean intake of energy 56.98% and protein 68.24% of RDA. The mean intake of calcium and iron was low, meeting about half and one-fourth of the % RDA. Mean % RDA intake of vitamin A (6.56%) and C (20.97%) was the most deficient. (**Kantawala and Shah. 2019)**

Methodology

METHODOLOGY

The "First 1000 Days" are a period of rapid physical growth and enhanced mental development that provides a once-in-a-lifetime opportunity to create lifelong health and intelligence. These first 1000 days of life prepare child for good health for the rest of the life. Providing the right nutrients to babies during their first 1000 days helps them avoid infections and encourages their developing brains and bodies to reach their maximum developmental potential. Documentation on nutrient intake and percent nutrient gap of children need to be generated and along with that improvement in maternal knowledge of appropriate complementary feeding practices should be done with community engagement strategies such as capacity building of frontline health workers for improving young children's diet. Which will help in achieving Targets of POSHAN Abhiyan by 2022.

The broad objective of the study is:-

BROAD OBJECTIVE

Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

SPECIFIC OBJECTIVES

- To assess socio- demographic profile of households of children (6- 23 months).
- To document complementary feeding practices of children (6-23 months).
- To document the utilization of services of Annaprasan diwas under ICDS programme by the mothers of children (6-23 months).
- To document the compliance of Balshakti supplied under ICDS programme.
- To calculate the CONGA for selected macro and micro nutrients based on ICMR RDA 2020.
- To strengthen the capacity of front line workers (AWWs, ASHAs and aarogya sathis of NGO) for effective counselling on age appropriate complementary feeding practices.
- To assess knowledge of FLWs) on complementary feeding before and after trainings.
- To collect feedback from FLWs regarding change in complementary feeding practices if any at community level after counselling by them.

ETHICAL APPROVAL

The Department approved the study of Medical Ethics Committee (No.IECHR/FCSC/2020/58), The Maharaja Sayajirao University of Baroda, Vadodara.

UNIVERSITY- NGO COLLABORATIVE STUDY

Aatapi Seva Foundation has requested us to carry out documentation on complementary feeding practices of children (6-23 months) in their selected villages.

Aatapi Seva Foundation

Aatapi Seva Foundation is a social developmental institute, incorporated under the companies act, 2013(section 8) working towards holistic and sustainable community development through promotion and strengthening of community based organizations. Established in 2008, Aatapi Seva Foundation evolved in response to the needs that emerged in the course of a baseline study conducted in four villages of Gajera, Piludara, Kareli and Vedach villages in Jambusar taluka of Bharuch district, Gujarat. Aatapi's field of activity is now concentrated in 53 villages of Jambusar and Ankleshwar blocks in Bharuch District. Aatapi works on various areas such as:-

- Livelihood
- Women Empowerment
- Health and Well being
- Inclusive and Quality Education

SELECTION OF THE STUDY AREA

The study was conducted in Jambusar block of Bharuch district of Gujarat. The study site is presented in **Figure 3.1**

About the district- Bharuch

Bharuch is a city at the mouth of the river Narmada in Gujarat in western India. Bharuch is the administrative headquarters of Bharuch District. Bharuch is a port city situated on the banks of the Narmada river. The Bharuch district is surrounded by Vadodara (North), Narmada (East) and Surat (South) districts. To the west is the Gulf of Khambhat. Total area of Bharuch is 6,509

km² including 6,339.21 km² rural area and 169.79 km² urban area. Bharuch has a population of 15,51,019 peoples. There are 3,33,483 houses in the district.

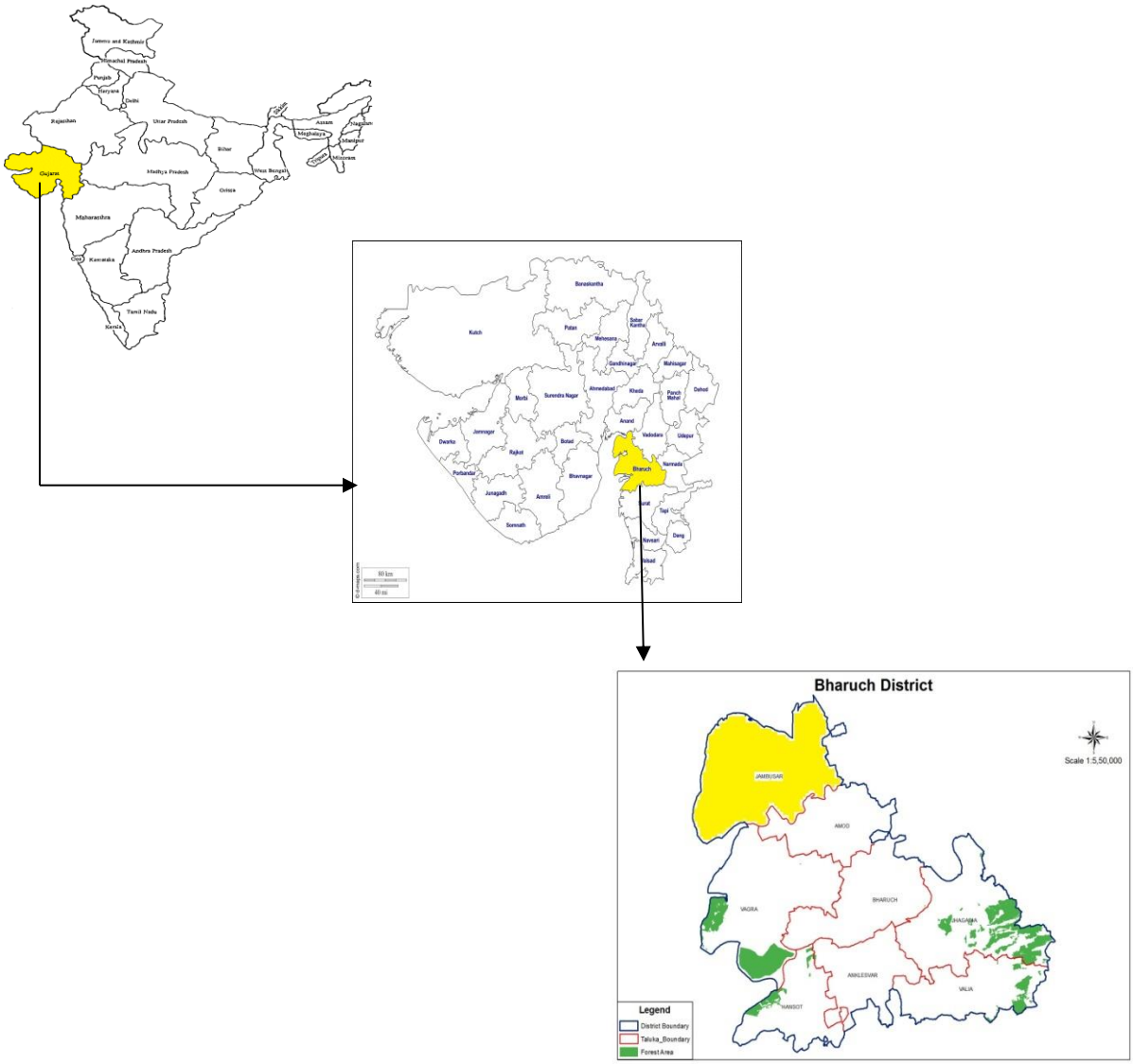
LOCATION OF THE STUDY

It was a University-NGO collaborative study so the study was conducted in the villages which comes under working of aatapi seva foundation in Jambusar block. Jambusar block was purposively selected and the study was conducted in anganwadi centers of 5 villages where aatapi seva foundation is currently working. These 5 villages are Daabha, Kareli, Kahanva, Piludra, Vedach and anganwadi centers selected for the study is presented below.

Details of villages

District	**Block**	**Village**	**Anganwadi Center name and number**
Bharuch	Jambusar	Daabha	Daabha-1
			Daabha-2
			Daabha-3
			Daabha-4
		Kareli	Kareli-1
			Kareli-5
		Kahanva	Kahanva-7
			Kahanva-13
		Piludra	Piludra-2
			Piludra-6
		Vedach	Vedach-3
			Vedach-5
			Vedach-6

Figure 3.1:- Location of study-



The study was divided into 2 phases:-

Phase-1- Formative Research on practices of mothers about Complementary feeding.

Phase-2- Capacity building of FLWs for effective counselling on age appropriate complementary feeding practices (CF)

Phase-1- Formative Research on practices of mothers about complementary feeding

A community-based mixed-method study was conducted to assess the dietary practices for young children in terms of nutrient intake, complementary feeding practices and nutritional status in terms of stunting, wasting, and underweight and utilization of THR- Balshakti.

Enrolment of young children aged 6-23 months

Selected anganwadi centers of 5 villages where Aatapi seva foundation is working was enrolled. Infants and young children (6-23 months) living in selected villages with mothers/caregivers were enrolled in the study. Permission was obtained from the ICDS office to contact AWCs in selected villages. From Anganwadi centers, a list of registered children aged 6-23 months was obtained. The mothers of these children who consented and were available during the data collection process were enrolled in the study.

Sample size

In this study, 13 Anganwadi centers of 5 villages where Aatapi seva foundation is working were enrolled. All the children's aged between 6 months to 23 months who were registered in the anganwadi centers were enrolled for the study.

The Inclusion and Exclusion criteria were as follows:

INCLUSION CRITERIA

- All the mothers of children (6-23 months) from the selected villages willing to participate in the study and gave consent were included.

EXCLUSION CRITERIA

- All the mothers of children (6-23 months) not willing to enrol for the study were excluded.

Data collection Tools

A pretested semi structured questionnaire in vernacular language was prepared. Data on sociodemographic profile, anthropometric measurements and ANC information, utilization of Annaprasann diwas and compliance of Bal Shakti, complementary feeding practices was collected. Data on both quantity and quality of food given to the child was elicited through 3 day 24 hour dietary recall to assess CONGA (comprehensive nutrient gap analysis) and complementary feeding indicators. (Appendix:-2) To gain a better understanding of the regional profile, general information about the district, block, and enrolled villages was gathered using a pre-tested semi-structured questionnaire.

Data collection

Six Arogya Sathis of Aatapi seva foundation who are from the same villages where the study area was who are supposed to carryout interpersonal counselling to vulnerable groups was trained to elicit required information using pretested semi structured questionnaire in vernacular language to avoid unnecessary exposure due to COVID19 pandemic. Research Investigator had monitored and accompanied each Arogya Sathi during data collection phase.

Socio-demographic profile

Information from mothers of children of (6-23 months) on their Socio-economic status was collected using a pre-tested questionnaire. Information regarding- name, educational qualification of mothers, economic status, community, type of family, occupation, enrolment of mother or father of child in any self help group of aatapi seva foundation, family size, the total number of children of 6-23 months, was collected.

Anthropometric measurements and ANC information

Data on child's age, gender, birth order, was collected. Anthropometric measurements such as child's length, weight, MUAC (mid upper arm circumference) and birth weight was taken to assess nutritional status. ANC information of mother with regard to index child such as type of delivery and place of delivery was also collected.

Length/Height measurement

Depending on a child's age and ability to stand, measure the child's length or height. A child's length is measured lying down (recumbent). Height is measured standing upright.

- If a child is less than 2 years old, measure recumbent length.
- If the child is aged 2 years or older and able to stand, measure standing height.

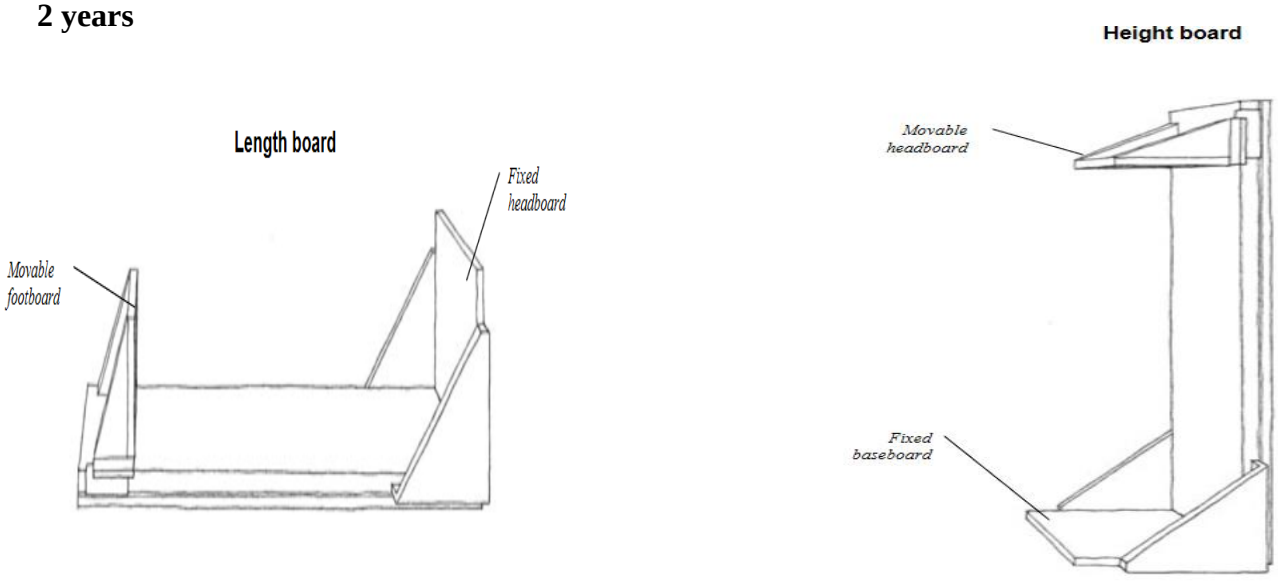
Procedure for Length

Infants' length was measured using an infantometer (<85cm child). It consists of the fixed headboard and movable foot piece. Before placing an infantometer on the firm flat surface, it was clean to disinfectant. The child's length was taken with minimal clothing and no footwear/ socks/ any hair ornaments. Reading observed nearest to 0.1 cm.

Procedure for Height

Height was measured using a stadiometer (>85cm). Stadiometer consisted of the vertical backboard, fixed baseboard, and movable headboard. Before procuring the height, it was placed on an even/smooth surface perpendicular to the ground. The children were asked to stand upright with the shoulders, hips, and heels together touching the wall and with no footwear, heels, socks or hair ornament and looking straight ahead. The head was held comfortably erect, arms hanging loosely by the sides. The headboard attached to the stadiometer was adjusted on the top of the subject's head in the center, crushing the hair at right angles and then noting the readings accordingly. Reading observed nearest to 0.1 cm.

Figure 3.2:- length board for 6-23 months old children and height board for children above 2 years



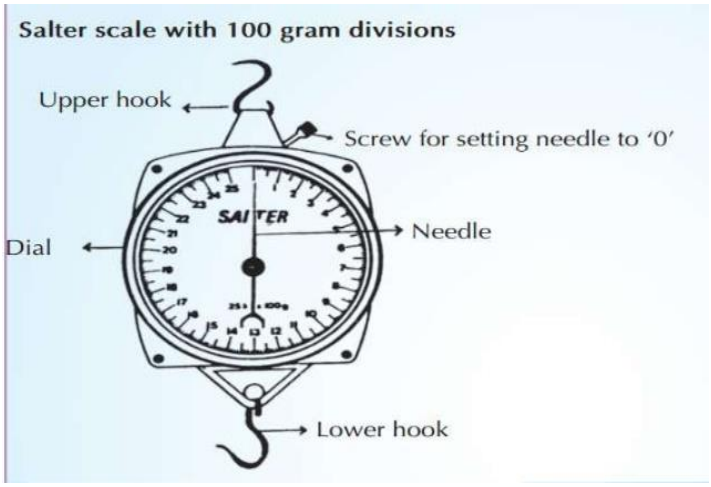
Weight measurement

Weight is a significant anthropometric indicator of body mass. It is a sensitive predictor of malnutrition and can be used to estimate an individual's nutritional status.

Procedure

A Salter weighing (spring hanging) scale, periodically calibrated, had been used to take the weight of the children. It is portable and used conveniently in the field. The children were placed in the trouser and hung erect on the scale without touching anything with minimal clothing or footwear and looking straight ahead. The scale adjusted to zero before each measurement. The weight reading recorded to the nearest 0.1kg (100g).

Figure 3.3:- Salter Scale for recording weight of 6-23 months old children.



MUAC Measurement

Mid Upper Arm Circumference indicates muscle mass and fat reserves and preferably measured on the left upper arm. It is done using standard, flexible, and non-stretchable tape and is independent of age. It is age-independent.

Figure 3.4:- MUAC Tape for children aged 6-59 months

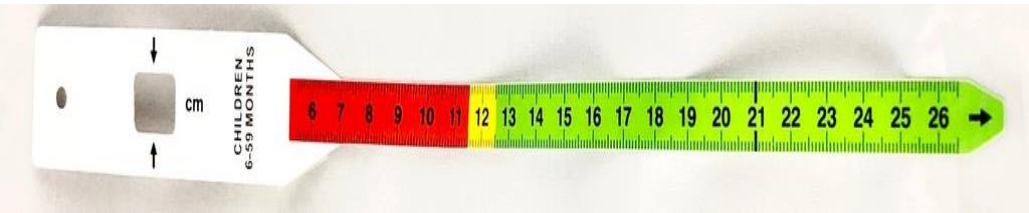


Table 3.1:- Classification for MUAC for children

Classification	MUAC(cm)
SAM	**<11.5**
MAM	**11.5-12.5**
Normal	**>12.5**

(Source: IMCI-WHO, 2014)

Procedure

First, locate the tip of the children's left shoulder (scapular bone), and then the elbow was bent to make a right angle. The tape placed at the tip of the shoulder and pulled straight down tothe tip of the elbow. MUAC reading takento the nearest 0.1 cm and then divided by 2 to get mid-point. Mark the mid-point with a pen on the arm. With the straightened arm, wrapped the tape (neither too tight nor too loose) around the arm at mid-point. The reading recorded accordingly.

Identification of tip of the shoulder

- At the tip of the shoulder, starting points of scapular bone, clavicle bone, and humerus are joined to each other.
- To find the acromion process on the shoulder, put the finger on the edge of the shoulder and rotate the hand in a circular direction and, during rotation, identify the bone which is not rotating.
- From that point, the length of the arm can be measured, and one can get the exact mid-point of the arm.

Nutritional status

Children (6-23 months) under-nutritional status was assessed through the following nutritional indicators (UNICEF).

Table 3.2:- Nutritional Indicators used for assessment of under-nutrition

Underweight (Low weight for age) - below minus two standard deviations from median weight for age of reference population. Severe underweight is below minus three standard deviations from median weight for age of reference population.

Wasting (low weight for height) - below minus two standard deviations from median weight for height of reference population. Severe wasting is below minus three standard deviations from median weight for height of reference population
Stunting (Low height for age) - below minus two standard deviations from median height for age of reference population. Severe stunting is below minus three standard deviations from median height for an age of reference population

ICDS service utilization

Information from mothers of children of 6 months to 23 months about available ICDS services was taken. Data on child's enrolment in anganwadi center, mothers knowledge about annaprashan diwas and utilization of it, mothers knowledge about balshakti and its service utilization, recepi demonstration at anganwadi center was collected.

Kitchen garden

Information on household having kitchen garden, who supported for kitchen garden, etc was collected.

Practices of children (6-23 months)

Information on age appropriate Practices about complementary feeding of children (6-23 months) was obtained using a pre-tested questionnaire from the mothers on the following topics.

- Initiation of breastfeeding
- Exclusive breastfeeding
- Continuation of breastfeeding
- Initiation of complementary feeding
- Care and WASH practices
- Utilization of balshakti
- Consumption of food groups
- Frequency and Quantity of complementary feeding

Dietary information

Data on dietary practices of children was taken through 24-hour dietary recall method. A 3 day dietary recall of quality and quantity of food consumed by all the children were collected. Standard cups and spoons were used to elicit information about the quantity of food consumed by children.

Figure 3.5:- Standard cups and spoons

Breastfeeding information

As our main focus was to assess nutrient gap among children of 6-23 months age, it is necessary to calculate breastmilk consumption by the child. Information on frequency of breastmilk given to child was taken in 24-hour dietary recall data to calculate nutrient contributes by breastmilk.

We allocated breast milk volumes based on the child's age in months using the available literature. Information available through research paper by Butte et el 2010 was considered. Information is presented below.

Table 3.3:- Calculation for nutrient contribution by Breastmilk consumption.

Sr. no.	Category of Breastfeeding	Age	Average human milk consumption
1	Exclusively breastfed	6-11.9 months	600 ml/day
2	Partially breastfed	6-11.9 months	600ml/day – amount of other milk ingested
3	Partially breastfed	12-17.9 months	89ml/feed
4	Partially breastfed	>17.9 months	59ml/feed

Source :- Butte ET AL. 2010

Nutrient composition of human milk is presented in **Table 3.4**

Table 3.4:- Nutrient composition of Human milk (per 100g)

Sr. No.	Nutrients	Human Milk Composition
1.	Water (g)	88
2.	Energy (kcal)	65
3.	Protein (g)	1.1
4.	Carbohydrate (g)	7.4
5.	Fat (g)	3.4
6.	Calcium (mg)	28
7.	Phosphorus (mg)	11
8.	Vitamin-A (µg)	41
9.	Thiamine (mg)	0.02
10.	Riboflavin (mg)	0.02
11.	Caseinogen	1.2
12.	Vitamin-C (mg)	3

Source:- Gopalan et. al. 1989

Nutrient Calculation

All the data of 24 hour dietary recall and breastfeeding was entered and analysed using DietCal software to arrive at per day and average nutrient intake by children. CONGA will be calculated for selected macro and micro nutrients based on recent RDA given by ICMR (2020).

Table 3.5:- Nutrients calculated using DietCal software

Macronutrients	Micronutrients
Energy, Protein, Fat	Iron, Vitamin-A, Zinc, Vitamin-B12, Folate, Calcium, Niacin, Iodine, Vitamin-B1, Vitamin-B6, Vitamin-C

Complementary feeding indicators

Recently shared IYCN Indicators by UNICEF, 2021 were also computes from the average data

Table 3.6:- Infant and young child feeding indicators

Sr. no	Indicators	Defination
A.	**BREASTFEEDING INDICATORS**	
1.	EVER BREASTFED	percentage of children born in the last 24 months who were ever breastfed
2.	EARLY INITIATION OF BREASTFEEDING	percentage of children born in the last 24 months who were put to the breast within one hour of birth.
3.	CONTINUED BREASTFEEDING 12–23 MONTHS	percentage of children 12–23 months of age who were fed breast milk during the previous day.
B	**COMPLEMENTARY FEEDING INDICATORS**	
1.	AGE APPROPRIATE INITIATION OF COMPLEMENTARY FEEDING	percentage of children born in the last 24 months who were initiated with complementary food at the completion of 6 months of age.
2.	COMPLEMENTARY FEEDING INDICATORS	percentage of infants 6–8 months of age who consumed solid, semisolid or soft foods during the previous day.
3.	MINIMUM DIETARY DIVERSITY 6–23 MONTHS	percentage of children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day.
4.	MINIMUM MEAL FREQUENCY 6–23 MONTHS	percentage of children 6–23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) at least the minimum number of times during the previous day.

5.	MINIMUM MILK FEEDING FREQUENCY FOR NON-BREASTFED CHILDREN 6–23 MONTHS	percentage of non-breastfed children 6–23 months of age who consumed at least two milk feeds during the previous day.
6.	MINIMUM ACCEPTABLE DIET 6–23 MONTHS	percentage of children 6–23 months of age who consumed a minimum acceptable diet during the previous day.
7.	EGG AND/OR FLESH FOOD CONSUMPTION 6–23 MONTHS	percentage of children 6–23 months of age who consumed egg and/or flesh food during the previous day.
8.	SWEET BEVERAGE CONSUMPTION 6–23 MONTHS	percentage of children 6–23 months of age who consumed a sweet beverage during the previous day.
9.	UNHEALTHY FOOD CONSUMPTION 6–23 MONTHS	percentage of children 6–23 months of age who consumed selected sentinel unhealthy foods during the previous day.
10.	ZERO VEGETABLE OR FRUIT CONSUMPTION 6–23 MONTHS	percentage of children 6–23 months of age who did not consume any vegetables or fruits during the previous day

Source:- UNICEF 2021

Information about district, block, village and anganwadi center were also entered through pre tested semi structures questionnaire

District and Block Profile

Information elicited regarding the Population demographics, type of health facilities at the block level, NGOs working, number of Health facilities, ICDS and Health staff pattern and availability. Also, the distance observed from district to block for the block profile and distance from Vadodara to the office of bharuch district was observed for district profile. (Appendix:-4 &5)

Village Profile

Information obtained about Population demographics, type of health facilities at the village level, NGOs working, number of Health Infrastructure, Health and ICDS Staff pattern and availability. Also, the distance observed from block to village. (Appendix:- 6)

Anganwadi Profile

Information obtained about population demographics, number of childrens, adolescents, pregnant and lactating mothers, days celebrated at anganwadi centers. Also, distance observed from block to anganwadi center. (Appendix:- 7)

Phase-2- Capacity building of Frontline workers (FLWs) for effective counselling on age appropriate complementary feeding practices

In the second phase of study, pre-knowledge of frontline workers on age appropriate complementary feeding practices using semi-structured questionnaire was taken, training module for the same was compiled from available modules of UNICEF and ICDS and training to frontline workers regarding the same was done. After the training knowledge retention of frontline workers was also elicited.

Table 3.7:- Frontline workers enrolled in study

Frontline workers	Total Number
Arogya sathis	7
Anganwadi Workers	13
ASHA workers	11
Total	31

Pre-knowledge data collection

A semi-structured pretested questionnaire was prepared to elicit the knowledge of frontline workers (Arogya sathis, Anganwadi worker, ASHA) on appropriate complementary feeding practices. The information and knowledge on following topics was gathered. (Appendix:-3)

General Information

- Education qualification
- Work experience in years
- Household they are working on
- Trainings received
- Counselling done by them on complementary feeding practices

Knowledge topics

- What is complementary feeding
- Foods to be included in complementary feeding
- Frequency and Quantity of foods should be given to child
- Care and WASH practices
- Balshakti
- Kitchen garden

- Regional complementary feeding practices

IEC Developed

A training module was compiled using available UNICEF and ICDS modules for frontline workers to be used during counselling regarding appropriate complementary feeding practices. (Appendix:-8)

Figure 3.6:- Training module on complementary feeding for frontline workers

The training module consisted of following topics. It was prepared in vernacular language:-

- Malnutrition
- First 1000 days
- What is Complementary Feeding?
- Importance of complementary feeding
- Correct age of Initiation of Complementary Feeding
- Continuation of Breastfeeding
- Quality of Complementary Feeding including dietary diversity
- Age appropriate quantity of Food
- Age appropriate frequency of Complementary Feeding

- Safe and hygienic preparation and storage of Complementary Feeding
- Active responsive Feeding
- Feeding during illness
- Balshakti
- Recipies for age-wise complementary feeding
- Standard cups and spoons
- Growth Monitoring
- Importance of attending Annaprshan diwas at AWC
- Use of produce of Nutri-kitchen Garden
- Counselling Skills

Capacity Building of Frontline workers

For proper community engagement local frontline workers were identified. A one day training on appropriate complementary feeding practices and other releted aspects using prepared training module was conducted for arogya sathis of Aatapi seva foundation. Along with training recipi demonstration of recipies from balshakti was given to arogya sathis. To reinforce knowledge 3 refresher training of arogya sathis was done at 15 days interval. The one day training on complementary feeding and other related aspects using training module was conducted for other frontline workers (anganwadi workers and ASHA workers) of selected 13 anganwadi centers under study.

Recipe Demonstration at anganwadi centers

Recipe demonstration given during training to arogya sathis was then replicated at their respective anganwadi centers. Recipe demonstration for balshakti was given to them along with proper counselling on complementary feeding practices using training module by arogya sathis of aatapi seva foundation with the help of anganwadi worker and anganwadi helper at their respective anganwadi centers. This was done with strict COVID 19 appropriate behaviour. Recipe demonstration was not done for Anganwadi workers and ASHA workers as they were busy in covid-19 related activities.

Post-knowlegde data collection

A semi-structured pretested questionnaire was prepared to elicit the knowledge of frontline workers (Arogya sathis, Anganwadi worker, ASHA) on appropriate complementary feeding practices at the end of the training and refresher training using the same (Appendices:-)

Feedback from frontline worker about Complementary feeding at community level

Feedback from arogya sathis regarding change in complementary feeding practices at community level after inter personal counselling by them was obtained through focus group discussion after 15 days of all trainings given.

Table 3.8:- Guidelines for Focus Group Discussions

Sr.No.	Topic	Subtopics
1.	Complementary Feeding Practices before councelling	What were the inadequate complementary feeding practices.
		What were the adequate complementary feeding practices.
		What were the myths and misconceptions.
2.	Councelling given on complementary feeding practices	Were all the topics councelled during training covered
		Difficulties you find during councelling
		IEC materials used during councelling and its benefits
3.	Change in complementary feeding post councelling	What are the changes you have seen in complementary feeding practices post councelling
		What are the complementary feeding aspects which needs to be strengthen more according to you
		Which are the complementary feeding aspects which were easily understood by the community
4.	New learnings	What were the new aspects you have learned from this training

		Do you think this aspects needs to be strengthen more

Tools and Techniques used in the study are summarised in Table 3.9

Table 3.9:- Tools and Techniques used for study

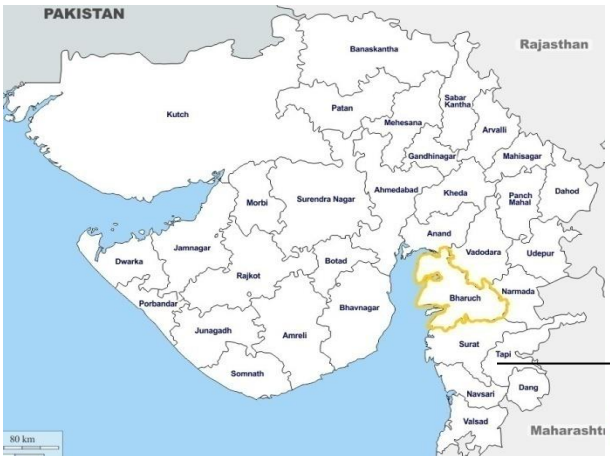
PARAMETERS	TOOLS
Block & Village profile, AWC profile FLW profile	Pre-tested Semi-Structured Questionnaire
Socio-economic profile	Pre-tested Semi-Structured Questionnaire
Complementary feeding Practices	Pre-tested Semi-Structured Questionnaire and 24 hour Dietary Recall Method
Utilisation of ICDs services- Annaprashan diwas and Balshakti	Pre-tested Semi-Structured Questionnaire
Pre and post data on knowledge of FLWs on CF and feedback	Pre-tested Semi-Structured Questionnaire
Feed back on change in CF practices at community level	feedback

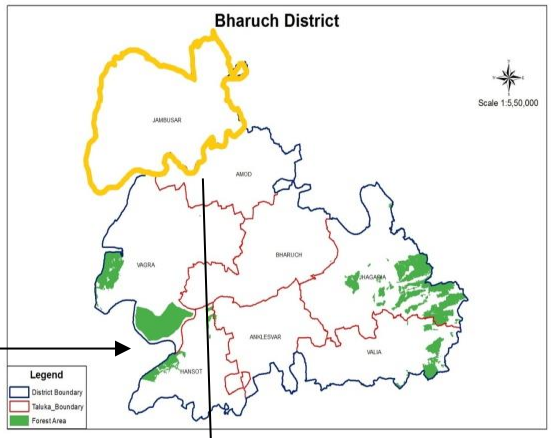
STATISTICAL ANALYSIS

- The data collected were entered and cleaned using Microsoft Excel version 15.
- Data were analyzed using Excel.
- Frequency distribution and the percentage was calculated for all quantitative parameters.

Figure 3.7:- Experimental design:-

Phase-1- Formative Research on practices of mothers about Complementary feeding.





Bharuch

Jambusar block

5 villages

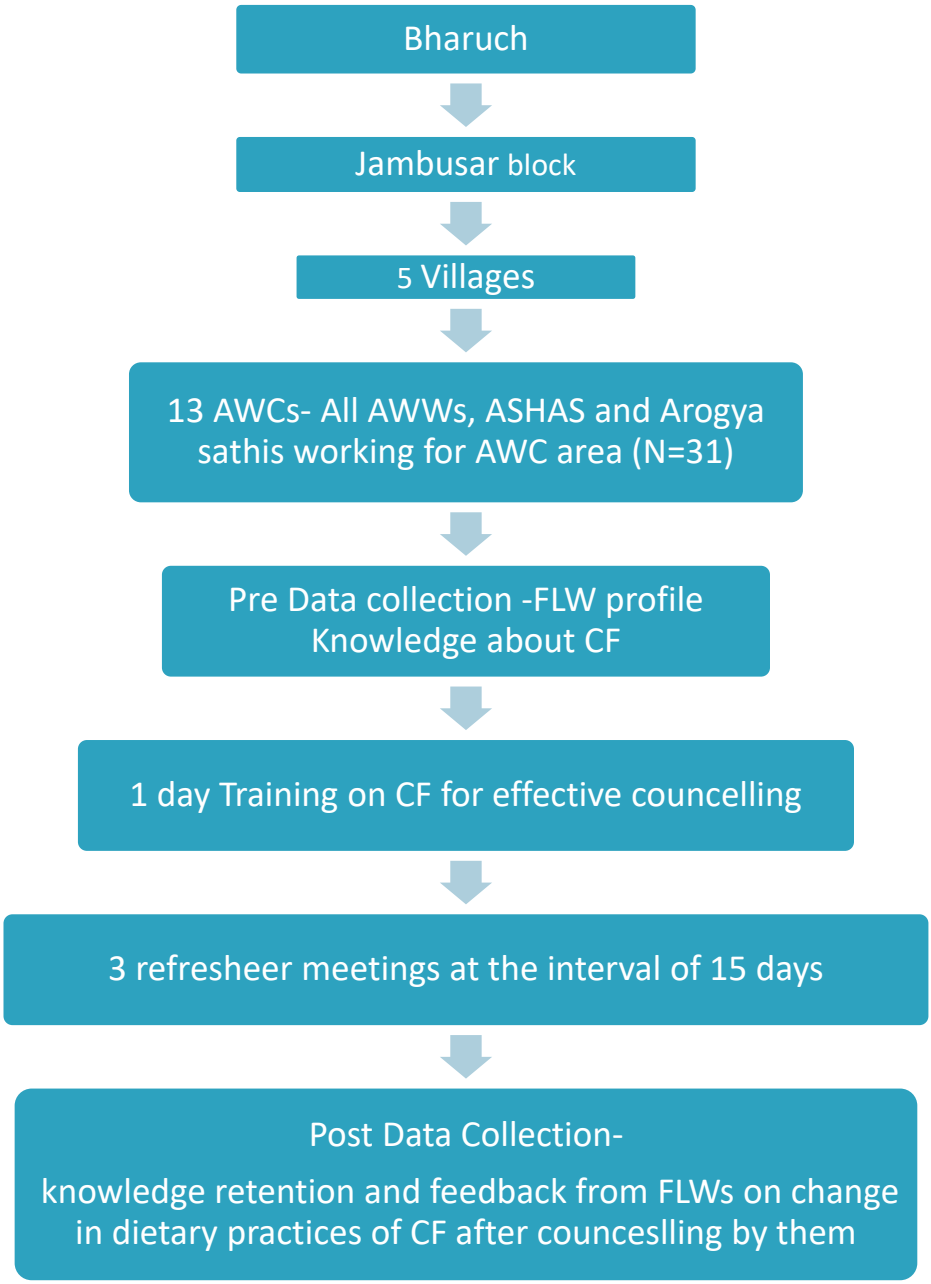
13 Anganwadi's

All the mothers of children (6-23 months) who give concent

Data collection on:-

1. Socio demographic profile
2. Complementary feeding practices
3. Utilization of ICDS services- Annaprashan diwas and Balshakti

Phase-2 Capacity building of FLWs (AWWs , ASHAs and Arogya Sathis)



Results and Discussion

RESULTS

Malnutrition is a serious public health concern in developing nations such as India, and undernutrition remains a serious public health concern in the most vulnerable groups. Proper nutrition for young children aids in adequate stunted growth and development, while those who are subjected to nutritional limits throughout their important years of life (first 1000 days) where maximum growth of child takes place end up with being undernourished. Providing adequate nutrition during complementary feeding period is essential for proper growth and development of child. Right quality, quantity and diversity among complementary food is a key factors for improved growth and development of children reducing undernutrition.

The present study was conducted with the broad objective of Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

The specific objectives were framed as under:

• To assess socio- demographic profile of households of children (6-23 months).

• To document complementary feeding practices of children (6-23 months).

• To document the utilization of services of Annaprasan diwas under ICDS programme by the mothers of children(6-23 months).

• To document the compliance of Balshakti supplied under ICDS programme.

• To calculate the CONGA for selected macro and micro nutrients based on ICMR RDA 2020.

• To strengthen the capacity of front line workers (AWWs, ASHAs and aarogya sathis of NGO) for effective counselling on age appropriate complementary feeding practices.

• To assess knowledge of FLWs on complementary feeding before and after trainings.

• To collect feedback from FLWs regarding change in complementary feeding practices if any at community level after counselling by them.

The study was carried out in selected villages of Jambusar block of Bharuch district where Aatapi Seva Foundation is working as an NGO. Total 13 anganwadi centers from 5 villages were enrolled for the study. Information of block, village and Anganwadi centers profile was obtained.

About Bharuch district

Table 4.1. represents demographic information of Bharuch district. Bharuch is the oldest city of Gujarat. Bharuch is a port city situated on the banks of the Narmada river surrounded by Vadodara (North), Narmada (East) and Surat (South) districts. To the west is the Gulf of Khambhat. The distance of Bharuch (jilla panchayat office) from baroda is 82 kms. The district with 8 blocks consists of 333,483 households with 675 revenue villages and total population of 1,55,1019 having 745,312 male population and 805,707 female population. The average sex ration of Bharuch district is 925 (no. of females per 1000 males). The total SC population and ST population of Bharuch is 622,35 and 488,194 respectively. There are total of 4 community health centers in Bharuch district along with 37 primary health centers and 200 sub centers. The sum total of private hospitals, government hospitals and hospitals run by any non-governmental organization was 5, 3 and 1 respectively.

Table 4.1: Information on district profile

Particulars	**District (Bharuch)**
Distance(km)	82 km (From Baroda to Bharuch office)
Total no. of blocks	8
Total no. of Households	333483
Total no. of Revenue villages	675
Total population	1,55,1019
Total male population	745,312
Total female population	805,707
Sex ratio	925
SC Population	622,35
ST Population	488,194
Number of Health Facilities available	
Community health center	4
Primary health center	37
Sub center	200
Private hospital	5
Government hospital	3
Hospital run by NGO	1

About Jambusar block

The study was conducted in 5 villages of jambusar district. Table 4.3. shows the demographic data of jambusar block. The distance of jambusar block from Bharuch (jila panchayat office) was 49 kms. The jambusar block of Bharuch district consists of 32277 households with overall population of 153694 from which 79981 are males and 73713 are female population having sex ratio 922 (no. of females per 1000 males). There are 104,11 SC population and 203,86 St population. Jambusar block consists of 1 Community health center along with 5 primary health centers and 27 sub centers followed by 2 private hospitals and 1 govrnment hospital. **(Table 4.2)**

Table 4.2: Information on block profile

Particulars	**District (Bharuch)**
Distance(km)	49 (From district office)
Total no. of Households	32277
Total no. of Revenue villages	82
Total population	153694
Total male population	79981
Total female population	73713
Sex ratio	922
SC Population	104,11
ST Population	203,86
Number of Health Facilities available	
Community health center	1
Primary health center	5
Sub center	27
Private hospital	2
Government hospital	1
Hospital run by NGO	0

Demographics of villages and anganwadi centers under study

In the present study, 5 villages of jambusar block were enrolled and **Table 4.3** shows the information of these villages. Here, among these 5 villages kahanva and vedach consist of maximum population that is 8809 and 7921 respectively and daabha consists of least population that is 4334. Out of these 5 villages only daabha consists of remarkale number of ST population. In all the 5 villages male population was higher than female population. Health facility such as sub center were there in other 4 villages except daabha, whereas there is a private hospital facility available at daabha. Total 13 Anganwadi centers from these 5 villages were enrolled for the study. Maximum anganwadi centers were from daabha village maximum number of children enrolled in the study are from vedach. The information of all the 13 anganwadi centers were presented below in **Table 4.4.**

Table 4.3: Information of villages enrolled under study

Particulars	**V1**	**V2**	**V3**	**V4**	**V5**
Name of village	Daabha	Kareli	Kahanva	Piludra	Vedach
Distance from block (km)	1.4	1.2	20	15	12
Total no. of households	833	1313	1915	1047	1744
Total population	4334	5719	8809	4960	7921
Total male population	2254	3007	4662	2594	4163
Total female population	2080	2712	4147	2366	3758
SC population	294	329	339	261	402
ST population	261	5	5	0	24
Availability of health facility					
Community health center	-	-	-	-	-
Primary health center	-	-	-	-	-
Sub center	-	Yes	Yes	Yes	Yes
Private hospital	Yes	-	-	-	-
Government hospital	-	-	-	-	-
Hospital run by NGO	-	-	-	-	-

Table 4.4:- Information of Anganwadi centers enrolled under study

Particulars	A 1	A 2	A 3	A 4	A 5	A 6	A 7	A 8	A 9	A 10	A 11	A 12	A 13
Name and number of Anganwadi center	Daabha 1	Daabha 2	Daabha 3	Daabha 4	Kareli 1	Kareli 5	Kahanva 7	Kahanva 13	Piludra 2	Piludra 6	Vedach 3	Vedach 5	Vedach 6
Total Population	1180	932	1245	881	800	705	729	547	987	1005	1373	713	1106
Total No. Of children registered													
0-6 months	5	5	11	10	13	6	8	5	7	6	11	5	10
6-24 months	12	20	25	12	12	20	15	9	13	21	31	17	40
2-5 years	49	60	69	58	46	39	37	29	37	35	68	40	67
Total no. of adolescent girls	34	20	20	41	31	25	45	11	58	43	56	30	33
Total No. of pregnant mothers registered	7	7	15	6	7	5	7	3	5	7	9	4	8
Total No. of Lactating mothers registered	5	5	11	10	13	6	8	5	7	6	11	5	10
Days celebrated at AWC													
Mamta Diwas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Suposhan diwas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Annaprashan diwas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baltula diwas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Annavitran diwas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The findings of the study are highlighted and presented into following sections according the phases:

Phase 1:- Formative research on practices of mothers about Complementary feeding

- Section 1:- Information on data collected
- Section 2:- Background information of Households
- Section 3:- Delivery information of mothers
- Section 4:- Nutritional status of Children (6-23 months)
- Section 5:- Utilization of ICDS services
- Section 6:- Infant and Young Child Nutrition practices
- Section 7:- Dietary practices of children (6-23 months)
- Section 8:- Comprehensive Nutrient Gap Analysis
- Section 9:- Practices of mothers regarding complementary feeding

Phase 2:- Capacity Building of Frontline Workers (FLW's) for effective counselling on age appropriate Complementary Feeding practices

- Section 10:- Profile of Frontline workers
- Section 11:- Knowledge of Frontline workers pre and post training

PHASE 1: Formative Research on practices of mothers about Complementary Feeding practices

Section 1:- INFORMATION ON DATA COLLECTED

Total 232 children of 6-23 months who were available and whose mothers gave consent were interviewed for assessing dietary practices of 6-23 months old children. In selected 13 anganwadi centers total 247 children of 6-23 months were registered out of which 232 children were available for data collection which shows 15 (6.1%) children were not available during this phase which is mostly because of mothers went to their maternal home for delivery or went to other village for labour work. Out of total 232 children interviewed majority of children which is 159 were from age range 12-23 months, followed by 41 children from 9-11 months of age range and 32 children from 6-8 months. The data on district, block, village, and anganwadi profiles, practices of complementary feeding and 24-hour dietary recalls were collected. The number of units on which the data was collected is presented in **Table 4.5.**

Table 4.5: Particulars for data collected on various aspects

Particulars	**Details**
Name of District with block	Bharuch (Jambusar)
Total Villages Covered	5
Number of Anganwadi Centers covered	13
Total Household covered	232
Total children covered (6-23 months)	232
(6-8 months)	32
(9-11 months)	41
(12-23 months)	159
Non-Availability rate of the children %(n)	6.1 (15)
Knowledge of Frontline workers about Complementary feeding	30

Distribution of children

Table.4.6. shows that in the present study 13 anganwadi centers of 5 villages were enrolled and total of 232 children from 232 households of 6-23 months of age who's mothers was interviewed about complementary feeding practices. Majority of children are from vedach and daabha. Total of 32 children of 6-8 months, 41 children of 9-11 months and 159 children of 12-23 months were interviewed. The total number of male and females were 128 and 104 respectively. Total of 247 childrens of 6-23 months were registered in the 13 anganwadi centers of 5 villages but 232 children were available during the data collection phase, 15 children and their mothers were not present in the village during data collection.

Table 4.6: **Distribution of children enrolled in the study**

Name of village	**Anganwadi name and number**	**6-8 months**		**9-11 months**		**12-23 months**		**Total**		**Grand Total**
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	
Dabha	Dabha-1	1	1	1	1	13	14	15	16	66
	Dabha-2	0	1	1	1	1	5	2	7	
	Dabha-3	4	1	1	2	7	3	12	6	
	Dabha-4	1	1	2	1	2	1	5	3	
Kareli	Kareli-1	2	0	1	0	4	5	7	5	30
	Kareli-5	3	0	1	1	5	8	9	9	
Kahanva	Kahanva-7	0	0	1	2	7	4	8	6	21
	Kahanva-13	0	1	3	0	2	1	5	2	
Piludara	Piludara-2	2	1	2	1	3	6	7	8	34
	Piludara-6	2	1	2	2	8	4	12	7	
Vedach	Vedach-3	3	2	5	1	8	9	16	12	81
	Vedach-6	0	1	4	2	16	13	20	16	
	Vedach (morvago)-5	1	3	1	2	8	2	10	7	
Total		19	13	25	16	84	75	128	104	**232**
		32		**41**		**159**				

Section 2:- BACKGROUND INFORMATION OF HOUSEHOLD

Table.4.7. shows the data of background information and socio economic status of households of children. The data shows that there were majority of joint families which is 67.7% followed by 18.1% nuclear families and 14.2% extended families. 68.5% households are having Below Poverty Line card for availing services of Public distribution system. From all the surveyed households 112 (48.3%) families comes under general category whereas, 58 families are of schedule caste followed by 17.7% families of other backward class (OBC) and 9.1% schedule tribe. Out of all the surveyed households only 8 households are having kitchen garden facility.

Majority of the head of the households that is 34.1% are either working as laboures or having private jobs, 28.9% are working as farm laboures and a very low percentage of households are having family business or government jobs. The percentage of illiteracy among women were 24.6% that is 57 mothers were illiterate out of all the interviewed mothers. Here, majority 96.1% of mothers were housewifes only followed by 4 mothers having private job and 3 mothers having own business.

The study was conducted in the villages where Aatapi seva foundation is working for better livelihood, health and wellbeing, etc. Aatapi seva foundation has formed self help groups in t these villages. Out of all the surveyed households 31 (13.4%) were part of self help groups (swa sahay juth). Aatapi seva foundation is also working for disabled people here 20 families were having a disability in any one member of family.

Table 4.7.: Household Information

Background information about household of children		
	%	**n**
Type of family		
Joint	67.7	157
Nuclear	18.1	42
Extended	14.2	33
Category		
Schedule tribe	9.1	21
Schedule caste	25	58
Other backward class	17.7	41
General	48.3	112

Economic category		
APL	31.5	73
BPL	68.5	159
Households having kitchen garden		
Yes	3.5	8
No	96.6	224
Occupation of head of the family		
Unemployed	0.43	1
Farm labour	28.9	67
Labourer	34.1	79
Family business	1.7	4
Government job	0.9	2
Private job	34.1	79
Education of the mother		
Illitrate	24.6	57
Can read and write	11.2	26
Primary	30.6	71
Secondary	32.3	75
Higher secondary	1.3	3
Occupation of mother		
Housewife	96.1	223
Farm labour	0.4	1
Labourer	0.4	1
Private job	1.7	4
Own business	1.3	3
Any of the family member part of group by Aatapi seva foundation		
Swa sahay juth	13.4	31
FPO	0.4	1
Federation	2.2	5
None	84.1	195
Any disability in family		
Yes	8.6	20
No	91.4	212

Facility of Nutri-kitchen garden

Out of all the 232 households surveyed only 8 (3.5%) households are having facility nutri-kitchen gardens which was promoted and created by Aatapi seva foundation. The basic food items grown in these gardens were methi, palak, beetroot, and tandaljo which was included in diets of 6-23 months old young children. **(Table 4.8.)**

Table 4.8: Use of produce of nutri-kitchen garden

Particulars	%	n
Household having kitchen garden	3.5	8
Who promoted kitchen garden		
AatapiSeva Foundation	100	8
Food items produced in kitchen garden		
Methi	100	8
Palak	100	8
Beetroot	75	6
Tandaljo	100	8
Children consuming food items produced in kitchen garden	100	8

Section 3:- DELIVERY INFORMATION OF MOTHERS

Table 4.9. shows that majority 82.3% of mothers had normal delivery for index child followed by 41 (17.7%) cesarean deliveries. Out of all the enrolled children 163 children were born in government hospitals followed by 53 (22.8%) deliveries took place in private hospitals. 9 children were born at home only and very low percentage of mothers went to Community health center and public health center for delivery.

Table 4.9: Ante-natal Care information of mother for index child

Particulars	%	n
Type of delivery		
Normal	82.3	191
C-section	17.7	41
Total		232
Place of delivery		
PHC	2.1	5
CHC	0.9	2
Government hospital	70.3	163
Private hospital	22.8	53
Home	3.9	9
Total		232

Section 4:- NUTRITIONAL STATUS OF CHILDREN (6-23 MONTHS)

Height and weight measurements were taken by Arogya sathis. Date of birth of children were confirmed with Anganwadi register. Anthropometric measurements of children were assesed by using 2006 WHO child growth standards reference. The data on children's age, gender, height, weight and Mid upper arm circumference (MUAC) were collected and analysed using WHO Anthro Plus Software.

Prevalence of Stunting, Underweight and Wasting

Prevalance of undernutrition in terms of stunting, underweight and wasting is depicted in figure 4.1. The prevalence rates of stunting, underweight and wasting by gender and age group are presented in **Table 4.10**

The data of nutritional status of 6-23 months old children shows prevalence of stunting as 48.3% (<-2 SD) with severe stunting 20.3% (<-3SD). The prevalence of stunting is seen more among boys as compared to girls. Highest stunting prevalence was seen in the age group of 12-23 months old children.

The prevalence of underweight is seen to be 24.1% (<-2SD) with severe underweight 12.9% (<-3SD). The prevalence shows that is 27.7% (<-2SD) boys were underweight and prevalence of underweight among girls is seen to be 17.3% (<-2SD).

The overall wasting prevalence was reported as 8.6% (<-2SD), whereas severely wasted children were 3.9% (<-3SD).

The overall anthropometric data shows that there is higher prevalence of stunting, underweight and wasting among boys as compared to girls **(Figure 4.1.)**. If we look into age group data it's seen that prevalence is higher in the age group of 12-23 months old children.

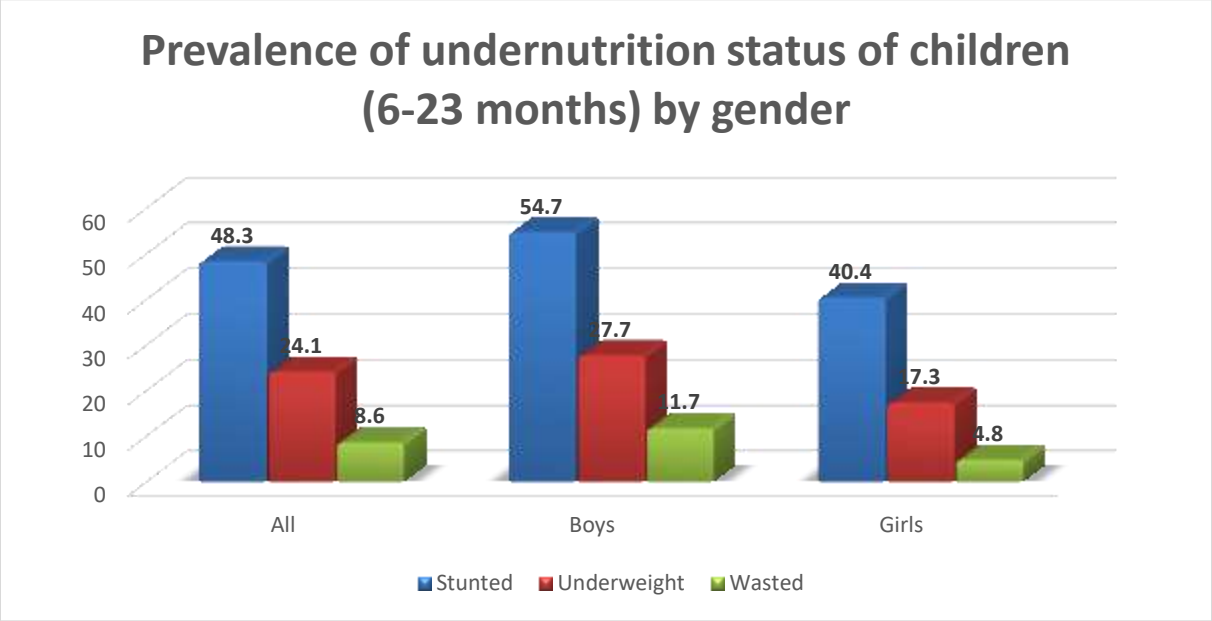
Mid Upper Arm Circumference (MUAC)

The total number of children having MUAC >12.5 cm is reported as 213 (91.8%) which comes under normal category. The data presented shows 17 (7.3%) children have MUAC between 11.5cm - 12.5cm, whereas only 2 children have MUAC <11.5cm.

Table 3.10: Nutritional classification of children by age group

Nutritional classification of children by age group								
Under nutrition	**All**		**6-8 months**		**9-11 months**		**12-23 months**	
	%	**n**	**%**	**n**	**%**	**n**	**%**	**n**
	(N=232)		**(N=32)**		**(N=41)**		**(N=159)**	
Stunting								
Stunted	48.3	112	31.3	10	41.5	17	53.4	85
Severely stunted	20.3	47	25	8	19.5	8	19.5	31
Underweight								
Underweight	24.1	56	18.8	6	34.1	14	22.6	36
Severely underweight	12.9	30	18.8	6	9.8	4	12.6	20
Wasting								
Wasted	8.6	20	9.4	3	17.1	7	6.3	10
Severely wasted	3.8	9	6.3	2	2.4	1	3.8	6
MUAC								
Red	0.9	2	0.00	0	4.9	2	0.00	0
Yellow	7.3	17	21.9	7	7.3	3	4.4	7
Green	91.8	213	78.1	25	87.8	36	95.6	152

Figure 3.1: Prevalence of undernutrition status of children (6-23 months) by gender



Section 5:- UTILIZATION OF ICDS SERVICES

The information about ICDS services utilized by children 6-23 months of age from the anganwadi centers were also elicited.

Enrollment at Anganwadi center

All the 6-23 months old children interviewed in the study were registerd at anganwadi centers, from which mothers of 206 (88.8%) children visits anganwadi center, out of which 159 (77.1) mothers visit anganwadi center monthly. **(Table 4.11.)**

Annaprashan diwas

Annaprashan diwas is celebrated at anganwadi centers on every third Tuesday of month. A small ceremony of giving first food was planned every month for the children who has completed 6 months of age. In this study only 96 mothers (44.4%) had knowledge of what is annaprashan diwas. If we talk about the activities being carried out at anganwadi centers on annaprashan diwas only 73% mothers knew about the activity of feeding balshakti raab to children, 32.3% mothers know about the counselling being done and 24% mothers knew about the recepi demonstration. Out of these 96 mothers, 86 (89.6%) mothers attended annaprashan diwas held at anganwadi centers and became part of activities conducted on that day. **(Table 4.12.)**.

Use of THR-Balshakti

Balshakti is a take home ration packets which is provided to children (6-23 months) under ICDS from anganwadi centers. In the present study, out of 232 children registered at anganwadi centers 224 (96.6%) children got the packets of balshakti monthly. 88.4% of the 224 children received 7 packets of balshakti every month, as per the ICDS protocol for a normal child. Out of these 224 children, 54.5 % consumed and liked balshakti, with 24.6 percent of them reported that balshakti is also shared by other family members. 33.5% of children who received balshakti consume it on a daily basis, with 22.3 percent consuming it once a day, 6.7 percent consuming it twice a day, and 8.9 percent consuming 50 ml of balshakti on a daily basis, and 8% consuming 80 ml of balshakti on a daily basis **(Table 4.13.).**

Table 4.11: Registration of enrolled children at Anganwadi center

Information regarding AWC (N=232)		
	%	**n**
Registration of child at AWC	100	232
Mothers visit to AWC	88.8	206
Frequency of visit(N=206)		
Once a week	10.7	22
Once in 15 days	12.1	25
Once in month	77.1	159

Table 4.12: Information on Annaprashan diwas services

Compliance of Annaprashan diwas (N=232)		
	%	**n**
Mothers having knowledge about annaprashan diwas	41.4	96
Mothers who attended annaprashan diwas (N=96)	89.6	86
Activities being carried out on annaprashan diwas (N=96)		
Counselling about age appropriate complementary feeding	32.3	31
Recepi demo from balshakti	24	23
Feeding balshakti raab to children	73	70

Table 4.13: Compliance of Balshakti

Compliance of Balshakti (N=232)		
	%	**n**
Children getting balshakti packets regularly	96.6	224
No of balshakti packets given per child (N=224)		
7 packets	88.4	198
10 packets	0.5	1
6 packets	3.1	7
5 packets	1.8	4
4 packets	5.4	12
3 packets	0.9	2
Childrens received balshakti monthly	100	224
Mothers attended recepi demo from balshakti done at AWC	32.1	72

Childrens who consume balshakti	54.5	122
Childrens who likes balshakti	54.5	122
Families where balshakti is shared by all members of family	24.6	55
Recepies being made from balshakti by the mother		
Raab	13	29
Sheero	41.5	93
Sukhdi	6.3	14
Raw	1.8	4
Children's consuming balshakti every day	33.5	75
Frequency of consumption / day (N=75)		
1 time	22.3	50
2 times	6.7	15
3 times	3.1	7
> 3 times	1.3	3
Quantity of consumption / serving / day (N=75)		
C1(200 ml)	2.2	5
C2(100 ml)	4.9	11
C3(80 ml)	8.0	18
C4(50 ml)	8.9	20
S1(15 ml)	8.0	18
S2(5 ml)	1.3	3

Section 6:- INFANT AND YOUNG CHILD NUTRITION PRACTICES

Breastfeeding Information

WHO recommends early initiation of breastfeeding (within one hour of birth), exclusive breastfeeding (till the completion of 6 months of age of child) and continuation of breastfeeding till 2 years of age of the child. Information of Infant and young child nutrition practices was elicited from the mothers of young children.

67.2% of children were breastfed within one hour of delivery, and 54.3% were exclusively breastfed until they were six months old. Currently, 79.3% of children are being breastfed out of which 69% children during day and 89.1% children during night are being breastfed 2-6 times.

Out of all children 20.7% children (6-23 months) were discontinued with breastmilk at the time of data collection. Continuation of breastmilk along with complementary feeding is important as

many of the nutrient needs of child is fulfilled through breastmilk. It was disheartening to learn that nearly 33% of the mothers gave pre lacteals like honey, water, milk etc. **(Table 4.14.)**

Table 4.14: Breastfeeding practices of children

Breastfeeding information	**(N=232)**	
	%	**n**
Early initiation of breastfeeding Within one hour of birth	67.2	156
Prelacteals given	32.8	76
Type of prelacteals given(N=76)		
Water	18.4	14
Honey	26.3	20
Milk	23.7	18
Sugar / patasa / jaggery water	31.6	24
Exclusive breastfeeding	54.3	126
Currently breastfeeding their child	79.3	184
Currently not breastfeeding their child	20.7	48
Childrens breastfed during day	79.3	184
Number of times child is being breastfed / day (N=184)		
< 2 times	4.9	9
2-6 times	69	127
7-9 times	20.7	38
> 9 times	5.4	10
Childrens breastfed at night	79.3	184
Number of times child is being breastfed at night (N=184)		
< 2 times	8.6	16
2-6 times	89.1	164
7-9 times	1.6	3
> 9 times	0.5	1

Complementary Feeding practices

Initiation of complementary feeding is recommended to start at the completion of 6 months of age. In the present study, 46.6% of children were timely initiated with complementary food at the completion of 6 months of age. Out of total 232 children interviewed 8 children (3.5%) were not initiated with complementary feeding they are still fed by breastmilk only. Out of the remaining 224 children, 75.9% began complementary feeding at home, while 24.1 percent began complementary feeding in an anganwadi centre on Annaprashan Diwas. 49.1% children were fed

with biscuit as their first food followed by 27.1% children fed with balshakti and 23.2 children fed with other home made food. **(Table 4.15.)**

Child should fed with proper frequency, quantity and consistency of complementary food to grow better. Out of 32 children of 6-8 months of age 30 children were initiated with complementary feeding. All the 30 children of this age group were fed with the frequency of 2-3 times a day out of which 30% children fed with 50 ml of complementary food everyday followed by 16.7% children fed with 200ml, 80ml and 15ml of complementary food per serving respectively. From these 30 children 16 children (53.3%) were given liquid food, 11 children (36.7%) were fed with semi-solid smashed food and 3 children (10%) fed with solid food.

Total 41 children of 9-11 months of age were interviewed in this study from which 35 children were started with complementary feeding. From these 35 children 19 children (54.3%) were fed 2-3 times a day followed by 14 children (40%) 3-4 times a day and 2 children (5.7%) 4-5 times a day. Out of 35 children 24 (68.6%) were fed with 50 ml of complementary food everyday per serving. Semi-solid smashed foods were given to 30 children (85.7%).

For children ages 12-23 months a majority of 56.6% children were fed 4-5 times a day with 39.6% children receiving 50 ml of food per serving everyday. 53.5% of children were getting solid food everyday. **(Table 4. 16.)**

Table 4.15: Initiation of complementary feeding

Particulars	**(N=232)**	
	%	**n**
Initiation of complementary feeding after 6 months of age	47	108
Children who haven't initiated with complementary feeding	3.5	8
Place of initiation of complemenatary feeding (N=224)		
Home	75.9	170
Anganwadi center/ on annaprashan diwas	24.1	54
First food given to the child (N=224)		
Balshakti	27.7	62
Biscuit	49.1	110
Home made food	23.2	52

Table 4.16: Age wise complementary feeding practices

Frequency of complementary feeding	**6-8 months %(n) (N=30)**	**9-11 months %(n) (N=35)**	**12-23 months %(n) (N=159)**
2-3 times	100 (30)	54.3 (19)	28.9 (46)
3-4 times	0	40 (14)	10.1 (16)
4-5 times	0	5.7 (2)	56.6 (90)
5-7 times	0	0	3.8 (6)
>7 times	0	0	0.6 (1)
Quantity of complementary feeding per feed			
C1(200 ml)	16.7 (5)	11.4 (4)	17 (27)
C20(100 ml)	13.3 (4)	5.7 (2)	9.4 (15)
C3(80 ml)	16.7(5)	8.6 (3)	27 (43)
C4(50 ml)	30 (9)	68.6 (24)	39.6 (63)
S1(15 ml)	16.7 (5)	0	6.4 (10)
S2(5 ml)	3.3(1)	5.7 (2)	0.6 (1)
S3(2.5 ml)	3.3(1)	0	0
Consistency of complementary feeding			
Liquid food	53.3(16)	14.3(5)	0
Semi-solid smashed food	36.7(11)	85.7(30)	46.5(74)
Solid food	10(3)	0	53.5(85)

Section 7:- DIETARY PRACTICES OF CHILDREN (6-8 MONTHS)

The dietary practices of children are discussed in this section. From the total 232 surveyed children 8 children haven't started consuming complementary food so the data was analysed for 224 children. The data on dietary consumption of children are collected through 24-hour dietary recall method. A 3 day 24-hour dietary recall was taken and dietary practices of children assessed on average of 3 day consumption. **Table 4.17.** shows 3 days average consumption of food groups and other discretionary foods by children. Majority of children consumed grains, roots and tubers that is 95.5%, legumes and nuts are consumed by 93.8% children, dairy product consumption was seen at 86.2%, and other vegetable consumption was 72.3%, very low consumption of flesh foods, eggs and vitamin A rich fruits and vegetables are seen. Out of total 224 children almost all the children that is 222 (99.1) consumed unhealthy packaged foods (wafers, fryms, biscuits, fried ready to eat packets). WHO has recommended that child should be breastfed till 2 years of age here, 82.1% of children were given breastmilk during 3 day dietary

recall. Under ICDS ready to eat take home ration as balshakti is given to children from their respective anganwadi centers during the dietary recall 53 children have reported consumption of balshakti.

If we look into the age wise distribution of food group consumption for children aged between 6-8 months zero flesh food, egg, and vitamin a rich food was reported. Only in this age group legumes and nuts consumption is more than grains, roots and tubers consumption. All the children of this age group consumed breastmilk and unhealthy packaged foods. For children aged between 9-11 months 94.3% grains, roots and tuber consumption was reported followed by 88.6% children consumed legumes and nuts. This is the only age group where 1 child consumed egg. Majority of children are aged between 12-23 months reported 100% consumption of grains, roots and tubers.

Table 4.17: Age wise distribution of percent consumption of food groups and other discretionary foods by children (6-23 months)

Food items consumed by children	6-8 months %(n) (N=30)	9-11 months %(n) (N=35)	12-23 months %(n) (N=159)	Total %(n) (N=224)
Grains, roots and tubers	73.3 (22)	94.3 (33)	100 (159)	95.5 (214)
Legumes and nuts	86.6 (26)	88.6 (31)	96.2 (153)	93.8 (210)
Dairy products	43.3 (13)	85.7 (30)	94.3 (150)	86.2 (193)
Flesh foods	0	0	3.1 (5)	2.2 (5)
Eggs	0	2.9 (1)	0	0.4 (1)
Vitamin A rich fruits and vegetables	0	5.7 (2)	10.1 (16)	8 (18)
Other fruits and vegetables	26.6 (8)	65.7 (23)	82.4 (131)	72.3 (162)
Packed foods	100(30)	97.1 (34)	99.4 (158)	99.1 (222)
Breastmilk	100 (30)	97.1 (34)	74.2 (118)	82.1 (184)
Balshakti	20 (6)	37.1 (13)	21.4 (34)	23.7 (53)

The standard indicators of complementary feeding were calculated on average of 3 day 24-hour dietary recall. The minimum meal frequency that is breastfed children receiving minimum numbers of meal for all the children were reported at 70%. For 6-8 months (2 meals) old breast

fed children it's 76.6% and for 9-11 months (3 meals) breastfed children 60% of meal frequency is seen. 71.5% of males and 68.3% females received minimum meal frequency.

According to WHO Minimum diet diversity is calculated at consumption of 5 food groups out of specified 8 food groups (1. Breastmilk, 2. Grains, roots and tubers, 3. Legumes and nuts, 4. Dairy product, 5. Flesh foods, 6. Eggs, 7. Vitamin-A rich fruits and vegetables, 8. Other fruits and vegetables). Here, for all the children 51% of minimum dietary diversity is reported. Among 6-8 month old breastfed children MDD is lowest only 3.3%, for 9-11 months old children and 12-23 months old children its 4.2% and 59.1% respectively. MDD among males and females were almost equal.

Minimum acceptable diet is the combination of minimum meal frequency and minimum dietary diversity. The total children having both MMF and MDD were 34%. For 6-8 month old children its lowest 3.3%, for children aged between 9-11 months and 12-23 months it's 25.7% and 41.5% respectively. MAD among males were 35% and among females 32.7%. **(Table 4.18 and Table 4.19) (Figure 4.2 and 4.3)**

Table 4.18: Age wise standard indicators of children

	6-8 months %(n) (N=30)	**9-11 months %(n) (N=35)**	**12-23 months %(n) (N=159)**	**Total %(n) (224)**
Minimum meal frequency	76.6 (23)	60 (21)	71.1 (113)	70 (157)
Minimum diet diversity	3.3 (1)	54.2 (19)	59.1 (94)	51 (114)
Minimum acceptable diet	3.3 (1)	25.7 (9)	41.5 (66)	34 (76)

Table 4.19: Gender wise standard indicator of children

	Male %(n) (N=123)	**Female %(n) (N=101)**	**Total %(n) (N=224)**
Minimum meal frequency	71.5 (88)	68.3 (69)	70 (157)
Minimum diet diversity	51.2 (63)	50.5 (51)	51 (114)
Minimum acceptable diet	35 (43)	32.7 (33)	34 (76)

Figure 4.2: Age wise standard indicator of complementary feeding of young children

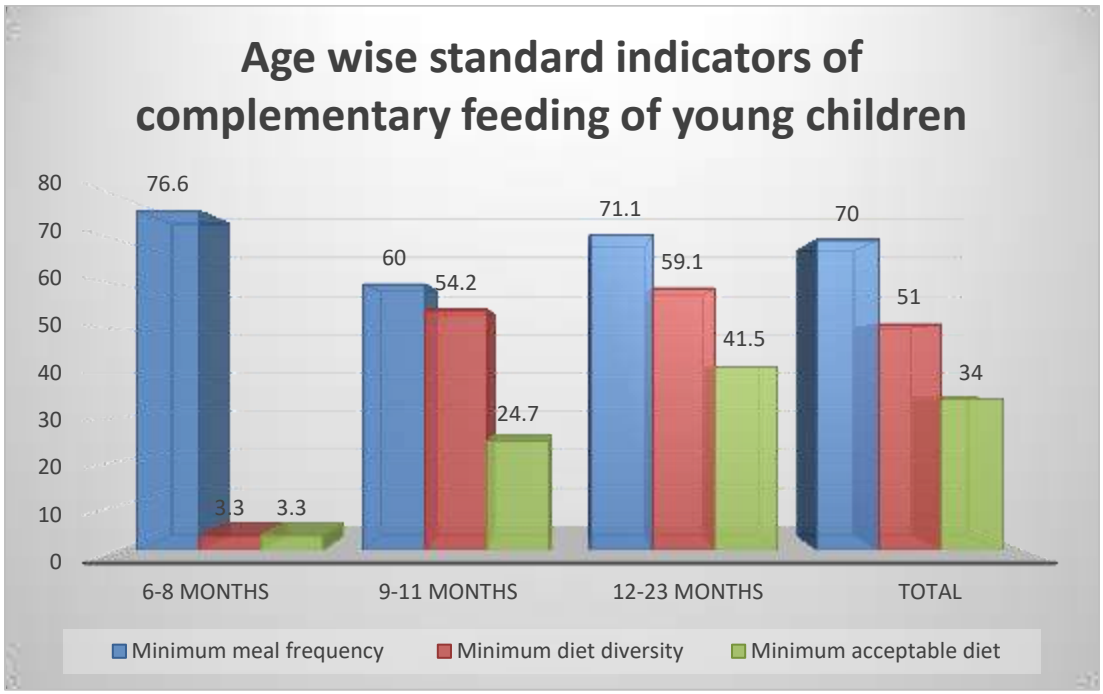
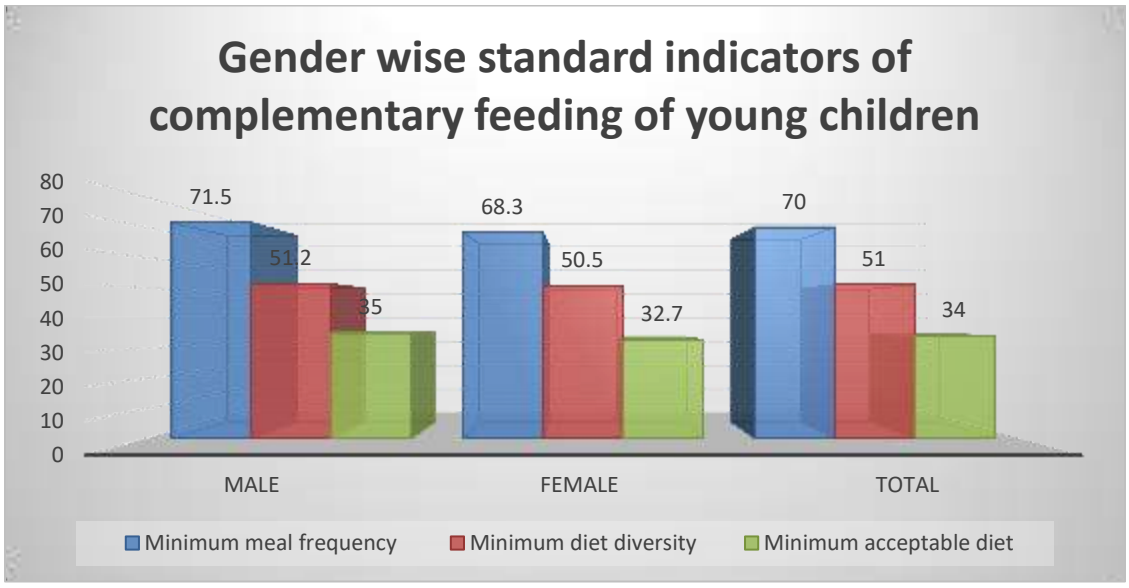


Figure 4.3: Gender wise standard indicator of complementary feeding of young children



Responses regarding top fed milk

Out of all the children interviewed only 64 children (27.6%) are fed with top milk. 46.9% children are fed with top milk once a day followed by 19 children (29.7%) receive top milk twice a day, 13 children consuming top milk 3-5 times a day and only 2 children are given top milk more than 6 times. **(Table 4.20)**

Table 4.20: Information regarding top fed milk

Particulars	**%**	**n**
Children being top-fed	27.6	64
Frequency of top feeding (N=64)		
< 2 times	46.9	30
2 times	29.7	19
3-5 times	20.3	13
> 6 times	3.1	2
Source of milk (N=64)		
Cow	21.8	14
Buffalo	68.8	44
Goat	9.4	6

Section 8:- COMPREHENSIVE NUTRIENT GAP ANALYSIS

Nutrient intake and Nutrient gap data of young 6-23 month old children

For conducting Comprehensive nutrient gap analysis the 3 day 24-hour dietary recall with the quantity of food consumption was done for 232 children. All the dietary data collected was entered and nutrient calculation is done using DietCal software. The 3 day average quantity of consumption of food by children was compared with RDA 2020 by ICMR. It is presented in **Table 4.21.** Nutrient gap was calculated for 3 macronutrients and 10 micronutrients. The RDA was given in the category of 6-12 months and 1-2 years so all the children were divided according to age for dietary calculation.

Table 4.21:- Recommended Dietary Allowance 2020 by ICMR

Nutrients	6-12 months children	1-2 years children
Energy(Kcal)	670	1110
Protein(g)	10.5	12.5
Thiamin(mg)	0.4	0.7
Niacin(mg)	5	7
B6 (mg)	0.6	0.9
Folate(µg)	85	120
Vitamin-C(mg)	30	30
Vitamin-A(µg)	350	390
Calcium(mg)	300	500
Iron (mg)	3	8
Zinc(mg)	2.5	3.3
Iodine(µg)	130	90

According to RDA 2020 for 6-12 months old children per day protein consumption should be 10.5g in our data the average intake of protein was 11.3g. There is no RDA for energy, the EAR for energy is equivalent to the Estimated Energy Requirement so for energy EAR was considered the EAR for energy is recommended 670 Kcal/day, in our data average energy intake of children was 580 Kcal. Micronutrient is as essential as macronutrients the RDA for micronutrients is less but still its unable to fulfill the nutrient needs. The RDA for thiamine is 0.4mg/day in our data average intake is 0.2mg. Daily 5mg niacin should be consumed according to RDA in our data average consumption is only 0.5mg. For Vitamin-B6 0.6mg per day was recommended but in our study children are having average consumption of 0.1mg. Folate intake should be 85µg/day but here average intake of folate is 11.6µg. RDA for Vitamin-Cis 30mg/day as compared to that average intake was only 17.7mg. Vitamin-A intake should be 350µg/day here average intake is seen 242.8µg. RDA for Calcium, Iron and Zinc is 300mg, 3mg and 2.5mg here average intake was 205.7mg, 0.7mg and 0.4mg respectively. Iodine intake according to RDA should be 130µg/day but here average intake of 10.1µg is seen.

According to RDA 2020 for 1-2 years old children per day protein consumption should be 12.5g in our data the average intake of protein was 12.6g. There is no RDA for energy, the EAR for energy is equivalent to the Estimated Energy Requirement so for energy EAR was considered the EAR for energy is recommended 1110 Kcal/day, in our data average energy intake of children

was 568.3 Kcal. Micronutrient is as essential as macronutrients the RDA for micronutrients is less but still its unable to fulfill the nutrient needs. The RDA for thiamine is 0.7mg/day in our data average intake is 0.2mg. Daily 7mg niacin should be consumed according to RDA in our data average consumption is only 1mg. For Vitamin-B6 0.9mg per day was recommended but in our study children are having average consumption of 0.1mg. Folate intake should be 120µg/day but here average intake of folate is 24.9µg. RDA for Vitamin-C is 30mg/day as compared to that average intake was only 11.2mg. Vitamin-A intake should be 390µg/day here average intake is seen 142.2µg. RDA for Calcium, Iron and Zinc is 500mg, 8mg and 3.3mg here average intake was 173.9mg, 1.6mg and 1mg respectively. Iodine intake according to RDA should be 90µg/day but here average intake of 20.9µg is seen. **(Table 4.22)** Whereas, the data on median intake of nutrients by children shows slight decrease as compared to mean intake. **(Table 4.23.)**

The average percent intake of nutrients by children is presented in the **Table 4.24**. The data shows that average protein intake of children of both the age groups were more than RDA. As compared to EAR energy intake of 6-12 month old children was 86.6% and for 1-2 years of children intake was 51.2%. If we compare RDA of micronutrients for 6-12 months old children average intake of Vitamin-C, Vitamin-A and calcium was more than half percentage. Very low percent intake of Niacin, Vitamin-B6, folate, iodine, iron and zinc was seen. For 1-2 year of children average intake of all the micronutrients were less than 50%.

After comparing average intake of children with RDA percent nutrient gap was derived for all the children. Percent energy gap was 13.4% among 6-12 months old children and 48.8% among 1-2 years old children. For 6-12 month old children high percent nutrient gap of nutrients such as Niacin, Vitamin-B6, Folate, zinc and iodine is seen. For 1-2 year old children nutrient of corcern are Niacin, Vitamin-B6, folate, iron, showing high nutrient gap. Whereas other nutrients also shows more than 50% nutrient gap. From the data nutrient gap of only 2 micronutrients Niacin and Folate showed significant difference in both the age groups.**(p-value>0.05) (Table 4.25) (Figure 4.4 and 4.5)**

Table 4.22 Average Nutrient intake of Nutrients among 6-23 months old children

Nutrients	6-12 months children		1-2 years children	
	Mean	SD	Mean	SD
Energy(Kcal)	580	136.6	568.3	153.1
Protein(g)	11.3	4	12.6	4.3
Thiamin(mg)	0.2	0.1	0.2	0.1
Niacin(mg)	0.5	0.5	1	0.4
B6 (mg)	0.1	0.1	0.1	0.1
Folate(µg)	11.6	12.5	24.9	14
Vitamin-C(mg)	17.7	4.7	11.2	6.1
Vitamin-A(µg)	242.8	69.5	142.2	90.5
Calcium(mg)	205.7	121.6	173.9	129
Iron (mg)	0.7	0.7	1.6	0.8
Zinc(mg)	0.4	0.5	1	0.5
Iodine(µg)	10.1	9.5	20.9	9.7

Table 4.23:- Median nutrient intake of 6-23 months old children

Nutrients	MEDIAN Nutrient Intake	
	6-12 months children	1-2 years children
Protein(g)	10.7	12.0
Energy(Kcal)	573.5	567.5
Thiamin(mg)	0.2	0.2
Niacin(mg)	0.4	0.9
B6 (mg)	0.0	0.1
Folate(µg)	7.3	20.9
Vitamin-C(mg)	18.2	10.6
Vitamin-A(µg)	249.4	141.2
Calcium(mg)	184.8	143.4
Iron (mg)	0.6	1.5
Zinc(mg)	0.4	0.9
Iodine(µg)	9.0	19.5

Table 4.24: Average of percent Nutrient intake among 6-23 months old children

Nutrients	6-12 months children	1-2 years children
Energy	86.6	51.2
Protein	107.9	101
Thiamin	42.1	26.8
Niacin	9.9	13.7
B6	7.5	18.8
Folate	13.5	20.8
Vitamin-C	58.9	37
Vitamin-A	69.4	36.2
Calcium	68.6	34.8
Iron	23.8	19.4
Zinc	16.6	30.1
Iodine	7.3	23.3

Table 4.25: Average of percent Nutrient gap among 6-23 months old children

Nutrients	6-12 months children	1-2 years children
Energy	13.4	48.8
Protein	-7.9	-1
Thiamin	56	73.1
Niacin	90.1	86.2
B6	92.5	81.1
Folate	86.5	79.2
Vitamin-C	41.0	63.0
Vitamin-A	30.6	63.8
Calcium	31.4	65.2
Iron	76.2	80.6
Zinc	83.4	69.9
Iodine	92.7	76.8

Figure 4.4: Nutrient gap among 6-12 months old children

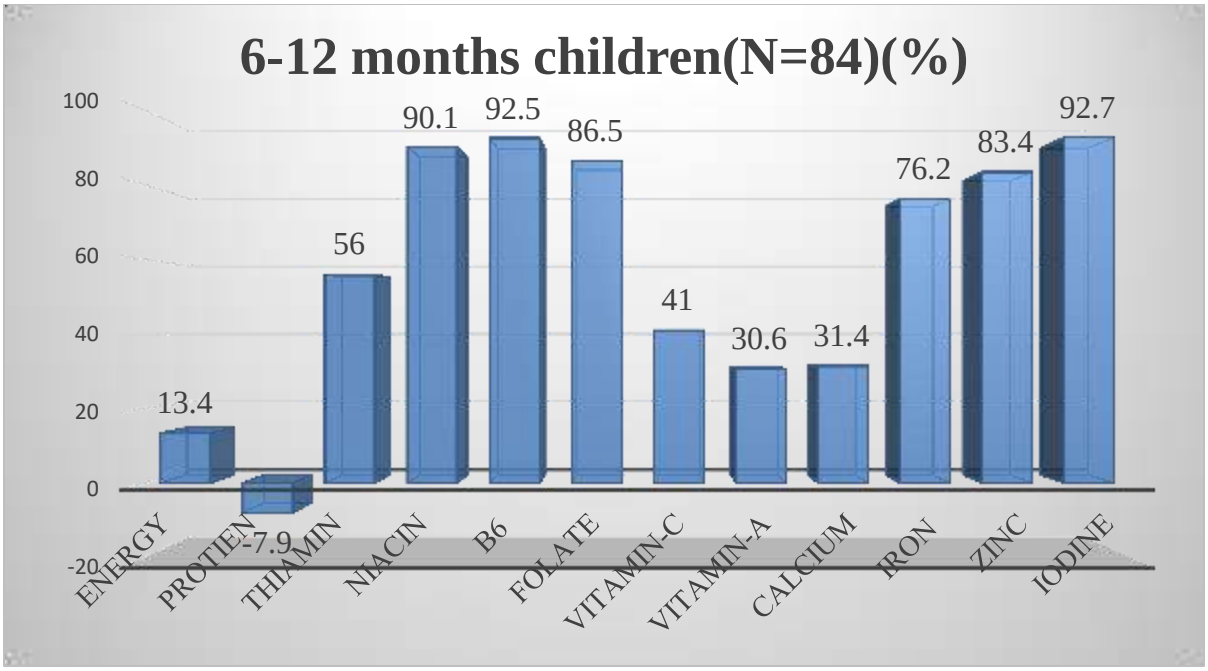
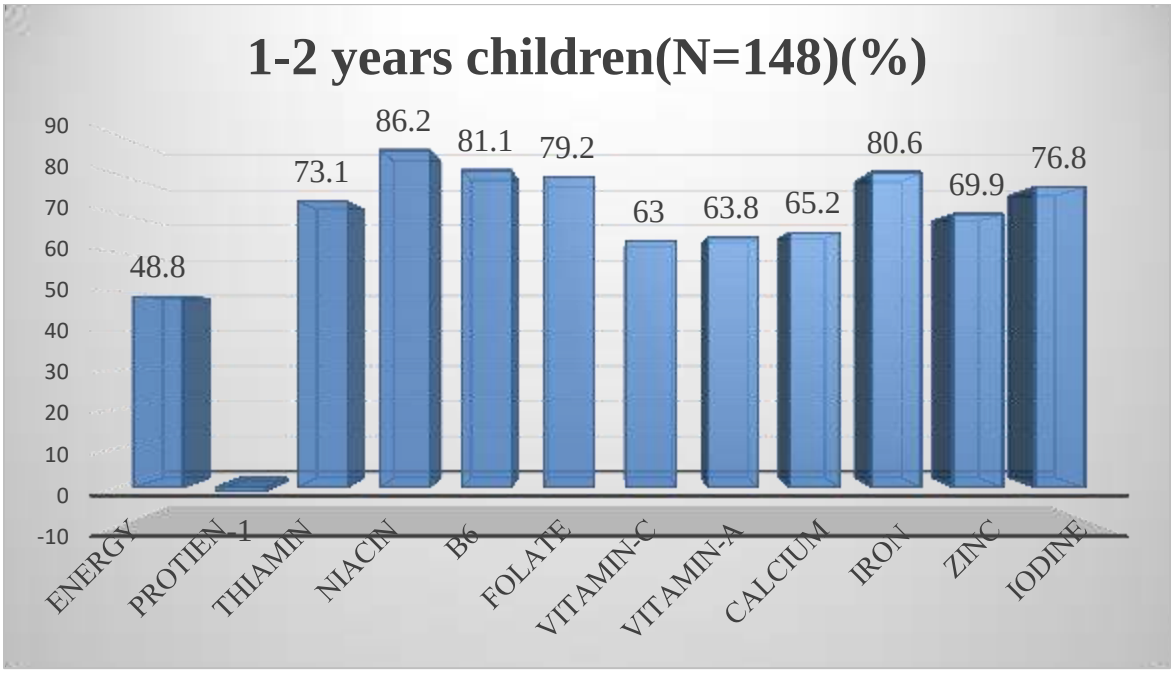


Figure 4.5: Nutrient gap among 1-2 years old children



The nutrient gap among the children according to their weight for age is shown in **Table 4.26**. The 6-12 months old children are having maximum of nutrient gap of folate and iron among both underweight and severely underweight children whereas, protein gap was not their among this children. From the data it can be interpreted that the dietary gap of nutrients such as energy, Vitamin-A, calcium among Underweight children of both the age groups showed significant difference. **(p-value<0.05)** For severely underweight children are having high nutrient gap. However, nutrients such as energy, protein, vitamin-A, calcium showed significant difference. **(p-value<0.05)**

Table 4.26: Nutrient gap among underweight children

Nutrients	Mean % nutrient gap			
	6-12 months		1-2 years	
	Underweight	Severely Underweight	Underweight	Severely Underweight
Protein(g)	-16.48	-9.69*	0.46	23.80*
Energy(Kcal)	11.3*	12.9*	47.36*	58.72*
Folate(µg)	84.3	85.1	80.68	85.35
Vitamin-A(µg)	26.5*	31.7*	65.23*	74.28*
Calcium(mg)	16.3*	33.4*	68.51*	76.77*
Iron (mg)	71.4	77.3	81.41	86.56

The **Table 4.27.** shows the nutrient gap of children who have minimum acceptable diet. The data shows that children who have minimum acceptable diet shows less percent nutrient gap for energy which was significantly different in both the age groups. (p-value<0.05) whereas, there is no difference in micronutrient gap of children having minimum acceptable diet. Thus we can say that the child should be fed with proper quality, quantity and frequency to fulfil dietary nutrient gap.

Table 4.27:- Comparison of Nutrient gap of children with MAD

Nutrients	Mean % nutrient gap of children having MAD (N=76)	
	6-12 months children (n=11)	1-2 years children (n=65)
Energy(Kcal)*	3.9	47.5
Protein(g)	-25.5	-0.9
Thiamin(mg)	49.5	72.1
Niacin(mg)	85.0	86.3
B6 (mg)	88.3	81.3
Folate(µg)	76.3	79.1
Vitamin-C(mg)	40.3	58.0
Vitamin-A(µg)	31.0	60.6
Calcium(mg)	26.9	66.9
Iron (mg)	59.9	79.9
Zinc(mg)	73.9	70.1
Iodine(µg)	87.7	76.1

Section 9:- PRACTICES OF MOTHERS REGARDING COMPLEMENTARY FEEDING

As child starts growing several physical skill developments were seen among children some of the mothers use this developmental milestones to start complementary feeding of child. Here mothers were asked about what are the milestones she noticed when first food were given to children. For 52.2% children mothers reported “child sitting with support” as a milestone during initiation of complementary feeding. **(Table 4.28.)**

Mothers needs to be counselled regarding appropriate complementary feeding practices. Here, majority of mothers get information regarding complementary feeding from family menbers followed by 21.1% mothers counselled by anganwadi worker, 9.1% mothers were counselled by NGO workers and 16.8% mothers didn’t received any counselling. **(Table 4.29)**

Majority of the mothers that is 95.3% wash their hands with soap regularly. 83.7% mothers wash hands before preparing for food followed by 32.1% mothers wash hands after preparing for food. After cleaning child’s feces 52.5% mothers wash their hands. 15.4% mothers perform all the hygenic practices. **(Table 4.29)**

Care during feeding child is most essential here, 76.7% mothers reported that mother and child both should wash hands before and after feeding followed by 38.4% mothers said reported child is being fed in a separate bowl and a separate spoon should be used for child. 32.3% mothers reported food is freshly prepared for child. 32.8% children are given safe water to drink. 75% children receives home water for drinking. **(Table 4.30)**

Table 4.28: Practices showing an understanding of 'milestones' by mothers of children (6-23 months) regarding initiating complementary feeding (Multiple Responses)

Developmental milestones for initiating complementary feeding to the child	%	n
The Child started crawling	1.3	3
The child started moving over his her abdomen	39.2	91
The child started sitting with support	52.2	121
The child started sitting without support	16.4	38
The child started standing with support	6.9	16

Table 4.29: Hygenic practices and counselling received by mother (Multiple Responses)

Councelling received by mothers regarding appropriate complementary feeding practices	%	n
Family members	61.6	143
Anganwadi worker	21.1	49
ASHA	1.3	3
ANM	1.7	4
Other lactating mothers	0.4	1
Doctor	2.6	6
NGO workers	9.1	21
Self	16.8	39
Hygenic practices followed by mothers		
	%	**n**
Mothers who wash their hands with soap regularly	95.3	221
When mothers wash their hands (N=221)		
Before preparing for food	83.7	185
After preparing food	32.1	71
After cleaning child's feces	52.5	116
Before giving food to child	20.8	46
After giving food to child	8.6	19
All of the above	15.4	34

Table 4.30: Care taken during feeding

Care taken during feeding (Multiple Responses)		
	%	**n**
Mother and child both should wash hands	76.7	178
Spoon/ bowl should be clean	38.4	89
Temperature of food	30.2	70
Food should be freshly prepared	32.3	75
Clean water should be given	6.5	15
Safe drinking water	32.8	76
All of the above	6.5	15
Care taken during giving water		
Boiled water	9.91	23
Clean water	15.1	35
Home water	75	174

HIGHLIGHTS

- 67.7% household were joint families and 48.3% households comes under general category.
- 68.5% households are having Below poverty line card.
- Stunting prevalence was 48.3%, underweight prevalence 24.1% and wasting 8.6% (<-2SD)
- 20.6% children from all the 6-23 months old children were not receiving breastmilk as it was discontinued before 23 months of age.
- Only 41.4% mothers are having knowledge about annaprashan diwas
- Around 33.5% of children consume balshakti regularly.
- Around 47% children were initiated with complementary food at the completion of 6 months of age. Whereas, 3.5% children were not initiated with complementary food at the time of data collection.
- Percent nutrient gap for all micronutrients was found in all the children.
- Energy deficit was 48.8% in 1-2 years old children as compared to 13.4% in 6-12 months age group.

Recent indicators of breastfeeding and complementary feeding

Indicators	**%**	**n**
Breastfeeding Indicators (N=232)		
Ever Breastfed	98.7	229
Early initiation of breastfeeding	67.2	156
Continued breastfeeding 12-23 months (N=159)	74.2	118
Complementary Feeding Indicators (N=224)		
Age appropriate initiation of complementary feeding	47	108
Infants 6-8 months old who consumed food during previous day (N=32)	94	30
Minimum dietary diversity 6-23 months	51	114
Minimum meal frequency 6-23 months	70	157
Minimum milk feeding frequency for non-breastfed children (N=48)	29.2	14
Minimum acceptable diet 6-23 months	34	76
Egg and/or flesh food consumption 6-23 months	2.6	6
Sweet beverage consumption 6-23 months	65.2	146
Unhealthy food consumption 6-23 months	99.1	222
Zero vegetable or fruit consumption 6-23 months	31.3	70

PHASE 2: CAPACITY BUILDING OF FRONTLINE WORKERS

Capacity building of frontline health workers

A one day training on complementary feeding practices and its related aspects were done to sensitize frontline workers who works in the community using training module. The training module consists of all the topics relates to complementary feeding. Training modules were given to all the frontline workers to use it during counselling. Total 31 frontline workers were sensitized for counselling on complementary feeding practices.

After the training three refresher trainings were conducted to enhance the knowledge given to the functionaries.

Total number of frontline workers enrolled in the study were as follows. The study was conducted with Aatapi seva foundation from which 7 arogya sathis were enrolled. 13 anganwadi workers and 11 ASHA workers working in the anganwadi centers which were part of the study were enrolled.

Total number of frontline workers enrolled

Frontline workers enrolled in the study (N=31)		
Arogya sathis	**Anganwadi Workers**	**ASHA Workers**
7	13	11

Profile of Frontline Workers

The background information of frontline workers is presented in **Table 4.31**. It shows that 51.6% of frontline workers were in the age group of 26-36 years followed by 41.9% workers were >33 years old. 41.9% frontline workers had completed secondary education. 32.3% workers were having work experience of 5-10 years.

Table 4.31: Background information of frontline workers

Particulars	**Frontline workers %(n)(N=31)**
Age of the functionaries	
18-25 years	6.5(2)
26-36 years	51.6(16)
33-42 years	41.9(13)
Education qualification	
Primary	22.6(7)
Secondary	41.9(13)
Higher secondary	25.8(8)
Graduate	9.7(3)
Years of Experience	
<5 years	29(9)
5-10 years	32.3(10)
11-20 years	25.8(8)
>21 years	12.9(4)

All the frontline workers reported about previous training on first 100 days and appropriate complementary feeding practices **(Table 4.32)**

Table 4.32: Information on training received by frontline workers

Particulars	**Frontline workers %(n)(N=31)**
Received any training	100(31)
Topics covered in the training	
First 1000 days	100(31)
Counselling skills	90.3(28)
Recepi demonstration	77.4(24)
Appropriate complementary feeding	100(31)
Nutri-Kitchen garden	48.4(15)

One of the most important job of frontline workers is to effectively counsel the community regarding various issues. Frontline workers are grassroot functionaries working with community by being part of it. Here, all the functionaries were conducting counselling sessions. Some of them were conducting counselling sessions on days celebrated at anganwadi centers where as some of them were conducting house to house visits for counselling. **(Table 4.33)**

Table 4.33: Information regarding counselling done by Frontline workers (Multiple Responses)

Particulars	**Frontline workers %(n)(N=31)**
Counselling done on complementary feeding practices	100(31)
Where was counselling done	
Mamta diwas	32.3(10)
Suposhan diwas	48.4(15)
Annaprashan diwas	80.6(25)
Annavitran diwas	38.7(12)
During home visits	48.4(15)
Topics covered by frontline workers during counselling	
Importance of complementary feeding	100(31)
Age appropriate complementary feeding	100(31)
Continuation of breastfeeding	100(31)
Age appropriate quantity of complementary feeding	77.4(24)
Quality of complementary food including dietary diversity and storage of food	90.3(28)
Age appropriate frequency of complementary food	64.5(20)
Use of balshakti and its recipies	32.3(10)
Demonstration of recipies for complementary feeding	32.3(10)
Active responsive feeding	16.1(5)
Use of produce of nutri-kitchen garden	22.6(7)
Wash practices	25.8(8)
Importance of attending annaprashan diwas at AWC	80.6(25)

One day training and 3 refresher training were conducted. After that knowledge retention on various aspects of complementary feeding was elicited. Data on pre post knowledge is presented in **Table 4.34**, **Table 4.35** and **Table 4.36**. It was found that all Frontline workers had correct understanding about concept of Complementary feeding, age of its initiation. However knowledge about frequency, quantity and quality of complementary feeding showed significant improvement. **(p-value<0.05)**

Table 4.34: Knowledge of frontline workers regarding complementary feeding practices pre and post training (correct responses)

Particulars	**Pre Training %(n)(N=31)**	**Post Training %(n)(N=31)**
What is complementary feeding	100(31)	100(31)
Correct age of initiation of complementary food	100(31)	100(31)
Continuation of breast feeding till 2 years of age	100(31)	100(31)
Correct frequency of food to be given		
6-8 months	77.4(24)	0100(31)
9-11 months	67.4(21)	100(31)
12-23 months	48.4(15)	100(31)
Correct quantity of food to be given		
6-8 months	38.7(12)	100(31)
9-11 months	58.1(18)	100(31)
12-23 months	41.9(13)	100(31)
Correct consistency of food to be given		
6-8 months	90.3(28)	100(31)
9-11 months	74.2(23)	100(31)
12-23 months	93.5(29)	100(31)

Knowledge on hygiene to be conducted for complementary feeding was also collected and presented in Table 4.33. It was found that care to be taken during preparation of food for children showed satisfying improvement (Table 4.33). Improvement for the some aspects showed Significant improvement **(p-value<0.05)**

Similarly For how food should be served to children showed great improvement. Before training only 9.7% Frontline workers knew about it and after sensitization workshops it improved to 90.3% with regard to knowledge about hand washing practices, improvement was seen in hand washing after cleaning feces and before preparing the food for child.

Table 4.35: Knowledge of frontline workers regarding care taken during feeding children pre and post training (correct responses) (Multiple Responses)

Particulars	**Pre Training %(n)(N=31)**	**Post Training %(n)(N=31)**
Care taken during preparation of food for child		
Hands of mother and child should be clean	38.7(12)	83.9(26)
Utensils should be clean and properly washed	64.5(20)	67.7(21)
Appropriate temperature of the food	32.3(10)	77.4(24)
Food should be freshly prepared	77.4(24)	80.6(25)
Drinking water should be clean	41.9(13)	64.5(20)
All of above	9.7(3)	48.4(15)
How food should be served to child		
In mother's plate	48.4(15)	16.1(5)
Along with other children of house in same plate	12.9(4)	9.7(3)
Separate plate	64.5(20)	90.3(28)
Hand Washing practices to be followed		
Before preparing food	38.7(12)	96.8(30)
After preparing food	45.2(14)	96.8(30)
After cleaning feces of child	90.3(28)	96.8(30)
Before feeding child	74.2(23)	90.3(28)
After feeding child	67.7(21)	80.6(25)

With regards to Annaprashan diwas, all frontline workers were aware about it but improvement in knowledge about its benefits was seen which was not significant. **(p-value>0.05) (Table 4.36)**

Table 4.36: Knowledge of frontline workers regarding annaprashan diwas and balshakti (correct responses) (Multiple Responses)

Particulars	**Pre Training %(n)(N=31)**	**Post Training %(n)(N=31)**
Place for celebrating annaprashan diwas	100(31)	100(31)
Benefits of annaprashan diwas	74.2(23)	100(31)
Importance of annaprashan diwas	80.6(25)	100(31)
THR-balshakti Number of packets to be given per child		
Normal child	100(31)	100(31)
SAM child	100(31)	100(31)

Feedback from frontline worker about Complementary feeding at community level

After training and refresher training of frontline workers on various aspects of complementary feeding and counselling skills, all frontline workers started counselling the mothers of young children. Due to COVID 19 situation Anganwasi workers and ASHA workers were involved in COVID 19 related work. Feedback from Arogya Sathis were obtained on community's response about Complementary feeding practices. It was reported that due to COVID 19 situation it was difficult for them to counsel mothers on various days.

- However, training module which was provided was useful in sensitizing young mothers.
- On counselling few mothers reported that counselling on quality, quantity, frequency and hygiene regarding complementary feeding helped them to understand better.
- Feedback from anganwadi workers and ASHA workers could not obtained because of their involvement in COVID 19 work.

HIGHLIGHTS

- Total 31 frontline workers were enrolled in the study.
- 41.9% functionaries have completed secondary education.
- Training and 3 refresher training on various complementary feeding practices were given to frontline workers.
- Improvement is seen in knowledge of frontline workers regarding quantity, frequency, quality of food which should be given to children and hygienic practices to be followed while feeding child.

DISCUSSION

The complementary feeding period is most critical period for child as child's maximum growth occurs during this period. This is the transition phase for a child from breastmilk to first foods thus the food given to child should have proper quantity and quality both. If children are given food of proper quality but quantity is les then child will be unable to satisfy his/her nutrient needs which results into undernutrition among young children. Early in life, a child's health has an impact on growth and other functions. Childhood malnutrition obstructs both physical and cognitive development.

The major highlights of the study was based on consumption of food groups, minimum meal frequency, minimum diet diversity, minimum acceptable diet, nutrient intake and nutrient gat among diets of young children (6-23 months), utilization of ICDS services, complementary feeding practices by mothers, nutritional status of young children.

Dietary practices of young children (6-23 months)

In the study 232 total children were interviewed out of which 8 children haven't started with first foods so, infant and young child feeding indicators were assessed for 224 children. The results of the study showed that minimum meal frequency of children were 70%, minimum diet diversity was 51% that is more than 5 food groups were consumed by 51% children in average of 3 day 24-hour diet recall and minimum acceptable diet was 34%.

To identify the links between feeding practises and underweight, **Shreyans Rai and Sayeed Unisa 2019-20** used three basic indicators: minimum meal frequency, minimum diet diversity, and minimum acceptable diet of infant and young child feeding practises. It's worth noting that children with a minimum diet diversity have an 18% lower risk of being underweight than those who don't.

Nutrient Gap among young children diet

In the present study, we calculated the nutrient intake of young children based on average of food quantity consumed by children in 3 days including breastmilk. The results showed the nutrient gap of Nutrients such as Niacin, Vitamin-B6, Folate, Iron, Zinc and Iodine are found in the diets of 6-12 months old children. whereas, for 1-2 years old children almost all the nutrients are having more than 50% gap.

A study by **Beal et al. 2021** showed high burden of nutrient gap for nutrients such as Iron, Zinc and Folate. A comprehensive nutrient gap analysis by **GAIN-UNICEF 2020** showed the high nutrient gap burden of Iron and Moderate nutrient gap burden of Vitamin-A, Zinc, Folate, Calcium and Niacin. **NIN report 2021** showed that the deficit intake reported to be high with respect to vitamin C (87%) followed by riboflavin (83%), calcium (77.5%), niacin (73.8%),vitamin A (71.8%) folic acid (62.9%) and iron (61.1%).

The findings of this research was presented in INTERNATIONAL CONFERENCE ON PUBLIC HEALTH. (Appendix – 9)

A research paper of the findings from this study was accepted by SCHOLARS' MOSAIC 2021

Summary and Conclusion

SUMMARY

The "First 1000 Days" are a period of rapid physical growth and enhanced mental development that provides a once-in-a-lifetime opportunity to create lifelong health and intelligence. These first 1000 days of life prepare child for good health for the rest of the life. Providing the right nutrients to babies during their first 1000 days helps them avoid infections and encourages their developing brains and bodies to reach their maximum developmental potential.

Every child has the fundamental right to adequate nutrition. Children who are fed enough of the right foods, in the right amounts, and at the right time in their development have a better chance of surviving, growing, developing, and learning. They are better prepared to thrive in the face of disease, disaster, or crisis.

Identifying food and nutritional gaps during the complementary feeding phase is important for guiding strategies and services aimed at enhancing infant health and nutrition. However, nationally representative results for young children are typically only available for a few foods and are obtained infrequently. Alternative sources of information, even if of poorer quality, may help fill data gaps, particularly where different sources point to the same nutrients of concern or dietary concerns. Given the broad variety of indicators used, the variability of data sources and demographic patterns, and variations in the severity of related health effects, policy makers have no clarity about how to find and assess information to identify the extent and importance of nutritional gaps in infant diets.

The Department approved the study of Medical Ethics Committee (No.IECHR/FCSC/2020/58), The Maharaja Sayajirao University of Baroda, Vadodara.

BROAD OBJECTIVE

Comprehensive Nutrient Gap Analysis of children (6-23 months) and capacity building of frontline workers of selected villages of Jambusar block in Bharuch district.

SPECIFIC OBJECTIVES

- To assess socio- demographic profile of households of children (6- 23 months).
- To document complementary feeding practices of children (6-23 months).
- To document the utilization of services of Annaprasan diwas under ICDS programme by the mothers of children(6-23 months).

- To document the compliance of Balshakti supplied under ICDS programme.
- To calculate the CONGA for selected macro and micro nutrients based on ICMR RDA 2020.
- To strengthen the capacity of front line workers (AWWs, ASHAs and aarogya sathis of NGO) for effective counselling on age appropriate complementary feeding practices.
- To assess knowledge of FLWs) on complementary feeding before and after trainings.
- To collect feedback from FLWs regarding change in complementary feeding practices if any at community level after counselling by them.

Phase 1:- Formative research on practices of mothers about Complementary feeding

It was a University-NGO collaborative study so the study was conducted in the villages which comes under working of aatapi seva foundation in Jambusar block. Jambusar block was purposively selected and the study was conducted in 13 anganwadi centers of 5 villages where aatapi seva foundation is currently working. These 5 villages were Daabha, Kareli, Kahanva, Piludra, Vedach and anganwadi centers selected for the study

Data on the following aspects were collected:-

- District profile (n=1)
- Block profile (n=1)
- Village profile (n=5)
- Anganwadi Profile (n=13)
- Socio- economic status (HHs) (n= 232)
- Practices about Complementary feeding (n=232)
- Three day 24 hour Dietary Recall Method (n=232)
- Weight, Height and MUAC (n=232)

HIGHLIGHTS

- 67.7% household were joint families and 48.3% households comes under general category.
- 68.5% households are having Below poverty line card.

- Stunting prevalence was 48.3%, underweight prevalence 24.1% and wasting 8.6% (<-2SD)
- 20.6% children from all the 6-23 months old children were not receiving breastmilk as it was discontinued before 23 months of age.
- Only 41.4% mothers are having knowledge about annaprashan diwas
- Around 54.5% of children consume balshakti regularly.
- Around 47% children were initiated with complementary food at the completion of 6 months of age. Whereas, 3.5% children were not initiated with complementary food at the time of data collection.
- Percent nutrient gap for all micronutrients was found in all the children.
- Energy deficit was 48.8% in 1-2 years old children as compared to 13.4% in 6-12 months age group.

Recent indicators of breastfeeding and complementary feeding as per WHO, UNICEF 2021 are presented below.

Indicators	**%**	**n**
Breastfeeding Indicators (N=232)		
Ever Breastfed	98.7	229
Early initiation of breastfeeding	67.2	156
Continued breastfeeding 12-23 months (N=159)	74.2	118
Complementary Feeding Indicators (N=224)		
Age appropriate initiation of complementary feeding	47	108
Infants 6-8 month old who consumed food during previous day (N=32)	94	30
Minimum dietary diversity 6-23 months	51	114
Minimum meal frequency 6-23 months	70	157
Minimum milk feeding frequency for non-breastfed children (N=48)	29.2	14
Minimum acceptable diet 6-23 months	34	76
Egg and/or flesh food consumption 6-23 months	2.6	6

Sweet beverage consumption 6-23 months	65.2	146
Unhealthy food consumption 6-23 months	99.1	222
Zero vegetable or fruit consumption 6-23 months	31.3	70

Phase 2:- Capacity Building of Frontline Workers (FLW's) for effective counselling on age appropriate Complementary Feeding practices

In the second phase of study, pre-knowledge of frontline workers on age appropriate complementary feeding practices using semi-structured questionnaire was taken, training module for the same was compiled from available modules of UNICEF and ICDS and training to frontline workers regarding the same was done. After the training knowledge retention of frontline workers was also elicited.

Data on the following aspects were collected:-

- Profiles of Frontline workers (n=31)
- Frontline workers knowledge pre and post training (n=31)
- Feedback through Focus group discussion (n=7)

HIGHLIGHTS

- Total 31 frontline workers were enrolled in the study.
- 41.9% functionaries have completed secondary education.
- Training and 3 refresher trainings on various complementary feeding practices were given to frontline workers.
- Improvement is seen in knowledge of frontline workers regarding quantity, frequency, quality of food which should be given to children and hygienic practices to be followed while feeding child.

CONCLUSION

- It can be concluded that high prevalence of undernutrition among 6-23 months children of selected villages of Jambusar block is a cause of concern.
- Breastfeeding practices and complementary feeding practices needs to be strengthen among young mothers.
- Nutrient gap was found for all the micronutrients.
- Training module on Complementary feeding practices appeared well designed and resulted in measurable improvements in Frontline workers knowledge with regard to quality, quantity and frequency of Complementary feeding.
- Hence, there is a need to strengthen capacity building of Frontline workers with regard to Complementary feeding practices, interpersonal counselling and promotion of nutri agri smart communities to improve complementary feeding practices.
- Baseline data on Complementary feeding practices and nutrient gap analysis may be useful for Non-governmental organizations to plan further interventions to improve the Infant and Young Child Nutrition practices and dietary diversity.

Recommendations

RECOMMENDATIONS AND WAY FORWORD

- There is a need to strengthen capacity building of Frontline workers with regard to complementary feeding practices and interpersonal counselling.
- Promotion of nutri agri smart communities to improve complementary feeding practices and dietary diversity.
- Further emphasis on counselling of mothers, fathers and other family members to improve complementary feeding practices is suggested.
- In collaboration with ICDS, celebration of Annaprashan diwas to be strengthened with maximum participation of mothers of young children.
- Periodic recipe demonstration using balshakti and other complementary feeding recipes.
- Counselling of mothers with growth chart of their child to be carried out at least, once in a month.
- Monitoring checklist to be filled by Arogya sathis to understand age appropriate IYCF practices.
- Counselling of pregnant mothers on early initiation of breastfeeding, colostrum feeding, no prelacteals and counselling of lactating mothers regarding exclusive breastfeeding should be done.
- We can involve Self Help Group members who can adopt SAM children and monitor their improvement.

Bibliography

BIBLIOGRAPHY

Alderman, H. and Headey, D.

The timing of growth faltering has important implications for observational analyses of the underlying determinants of nutrition outcomes. PLoS One, 2018; 13(4): p. e0195904.

Anuraag Chaturvedi MPH, N Nakkeeran PhD, Minal Doshi MPH, Ruchi Patel MSc, Sadhana Bhagwat MD
Capacity of frontline ICDS functionaries to support caregivers on infant and young child feeding (IYCF) practices in Gujarat, India
Asia Pac J Clin Nutr 2014;23(Suppl):S29-S37

ARUN GUPTA and NEELIMA THAKUR
Infant and Young Feeding Practices in India: Current Status and Progress Towards SDG Targets
DOI: 10.16943/ptinsa/2018/4944

Aripin Ahmad, Siti Madanijah , Cesilia Meti Dwiriani and Risatianti Kolopaking
Complementary feeding practices and nutritional status of children 6-23 months old: formative study in Aceh, Indonesia
Nutrition Research and Practice 2018;12(6):512-520

Ahmad I, Khalique N, Khalil S, Urfi, Maroof M. (2018)
Dietary diversity and stunting among infants and young children: A cross-sectional study in Aligarh.
Indian J Community Med 2018;43:34-6

Aguayo VM.
Complementary feeding practices for infants and young children in South Asia. A review of evidence for action post-2015.
Matern Child Nutr. 2017;13(S2): e12439. https://doi.org/10.1111/mcn.12439

Abeshu MA, Lelisa A and Geleta B (2016)
Complementary Feeding: Review of Recommendations, Feeding Practices, and Adequacy of Homemade Complementary Food Preparations in Developing Countries – Lessons from Ethiopia. Front. Nutr. 3:41. doi: 10.3389/fnut.2016.00041

Abera, S. F., Kantelhardt, E. J., Bezabih, A. M., Gebru, A. A., Ejeta, G., Lauvai, J., … Scherbaum, V. (2019).
Nutrition-specific and sensitive drivers of poor child nutrition in Kilte Awlaelo-Health and Demographic Surveillance Site, Tigray, Northern Ethiopia: implications for public health nutrition in resource-poor settings.
Global Health Action, *12*(1).

Comphrensive National Nutrition Survey Report (CNNS) REPORT GUJARAT (2016-2018)

Comphrensive National Nutrition Survey Report (CNNS) REPORT INDIA (2016-2018)

Chalachew Abiyu and Tefera Belachew (2020)
Effect of complementary feeding behavior change communication delivered through community-level actors on the time of initiation of complementary foods in rural communities of West Gojjam zone, Northwest Ethiopia: a cluster-randomized controlled trial *20:509 https://doi.org/10.1186/s12887-020-02396-z*

CORE COMMITMENTS FOR CHILDREN HUMANITARIAN ACTION
Humanitarian Policy Section Office of Emergency Programmes, UNICEF Published by UNICEF

Chaudhary SR, Govil S, Lala MK, Yagnik HB.
Infant and young child feeding index and its association with nutritional status: A cross-sectional study of urban slums of Ahmedabad.
J Fam Community Med 2018;25:88-94

Chandwani, H., Prajapati, A., Rana, B., & Sonaliya, K. (2015).
Assessment of infant and young child feeding practices with special emphasis on IYCF indicators in a field practice area of Rural Health Training Centre at Dabhoda, Gujarat, India.
International Journal of Medical Science and Public Health, *4*(10), 1414.

Chessa K. Lutter and Juan A. Rivera
Nutritional Status of Infants and Young Children and Characteristics of Their Diets
The Journal of Nutrition, Volume 133, Issue 9, September 2003, Pages 2941S–2949S, https://doi.org/10.1093/jn/133.9.2941S

Dagmawit Solomon, Zewdie Aderaw and Teketo Kassaw Tegegne
Minimum dietary diversity and associated factors among children aged 6–23 months in Addis Ababa, Ethiopia
International Journal for Equity in Health (2017) 16:181 DOI 10.1186/s12939-017-0680-1

Dr. Hemangini Gandhi , Prof. Meenakshi Mehan , Halak Mehta and Daisy Das
Complementary Feeding Practices of Young Children (6-23 Months) in Aspirational District of Gujarat, India
Zeichen Journal, ISSN No: 0932-4747, Volume 7, Issue 2, 2021

Eskezyiaw Agedew and Tefera Chane (2015)
Prevalence of Stunting among Children Aged 6–23 Months in Kemba Woreda, Southern Ethiopia: A Community Based Cross-Sectional Study
Hindawi Publishing Corporation Advances in Public Health Volume 2015, Article ID 164670, 6 pages http://dx.doi.org/10.1155/2015/164670

Feyisa BB, Tefera GM, Endris BS, Asayehu TT, Gebreyesus SH.
Feeding practice, energy, and nutrient intake adequacy among children aged 6–23 months in Southern Ethiopia: a community based cross-sectional study.
Food Sci Nutr. 2020;8:6680–6690. https://doi.org/10.1002/ fsn3.1962

GUIDING PRINCIPLES FOR FEEDING NON-BREASTFED CHILDREN 6-24 MONTHS OF AGE

World Health Organization 2005

Global Nutrition Report 2020

GAIN and UNICEF.
Comprehensive Nutrient Gap Assessment (CONGA): Findings for children 6–23 months in India. GAIN. Geneva, Switzerland, 2020.

Gandhi and Patni (2017)
To compare nutritional status and to assess child feeding and caring practices of lactating mothers under SWASTH VATSALYA YOJANA and ICDS Scheme in rural blocks of Vadodara
Unpublished M.Sc. Thesis, The Maharaja Sayajirao University of Baroda, Department of Foods and Nutrition.

Gandhi H, Shah M.
IYCN practices and nutritional status of young children (0-5 years) in Gujarat: insights from national data sets.
IP J Nutr Metab Health Sci 2020;3(1):1-5.

Indira Bose, Giulia Baldi, Lynnda Kiess, Saskia de Pee (2019)
The "Fill the Nutrient Gap" analysis: An approach to strengthen nutrition situation analysis and decision making towards multisectoral policies and systems change
Matern Child Nutr. 2019;15:e12793.

Jennifer O Fisher, Nancy F Butte, Patricia M Mendoza, Theresa A Wilson, Eric A Hodges, Kathleen C Reidy, and Denise Deming
Overestimation of infant and toddler energy intake by 24-h recall compared with weighed food records
Downloaded from https://academic. oup.com/ajcn/article/88/2/407/4650167 by guest on 30 December 2020

Jessica M. White, France Bégin, Richard Kumapley, Colleen Murray, Julia Krasevec
Complementary feeding practices: Current global and regional estimates
Matern Child Nutr. 2017;13(S2):e12505.

Kathryn G. Dewey and Bineti S. Vitta
Strategies for ensuring adequate nutrient intake for infants and young children during the period of complementary feeding
Insight Ensuring Adequate Nutrition, A&T Technical Brief Issue 7, November 2013

Kathryn G. Dewey
The Challenge of Meeting Nutrient Needs of Infants and Young Children during the Period of Complementary Feeding: An Evolutionary Perspective
The Journal of Nutrition Issues and Opinions

Karmee N, Satapathy SP, Tripathy RM.
Infant and young child feeding practices among mothers attending an Urban Health Training Centre (UHTC): a cross-sectional (mixed methodology) study in Berhampur, South Odisha, India. Int J Contemp Pediatr 2018;5:161-8

Karisa Dafursa and Samson Gebremedhin
Dietary Diversity among Children Aged 6–23 Months in Aleta Wondo District, Southern Ethiopia
Hindawi, Journal of Nutrition and Metabolism Volume 2019, Article ID 2869424, 10 pages https://doi.org/10.1155/2019/2869424

K. Mallikharjuna Rao, N. Balakrishna, N. Arlappa, A. Laxmaiah & G.N.V. Brahmam (2010)
Diet and Nutritional Status of Women in India, Journal of Human Ecology, 29:3, 165-170, DOI: 10.1080/09709274.2010.11906259

Laura Jabri, Diana Margot Rosenthal, Lorna Benton, and Monica Lakhanpaul
Complementary feeding practices and nutrient intakes of children aged 6–24 months from Bangladeshi background living in Tower Hamlets, East London: a feasibility study
Journal of Health, Population and Nutrition (2020) 39:4 https://doi.org/10.1186/s41043-020-0213-1

Mansi Vijaybhai Dhami , Felix Akpojene Ogbo, Uchechukwu L. Osuagwu and Kingsley E. Agho
Prevalence and factors associated with complementary feeding practices among children aged 6–23 months in India: a regional analysis
BMC Public Health (2019) 19:1034 https://doi.org/10.1186/s12889-019-7360-6

Motuku J. N, Ochola S, Osero J.
Maternal Knowledge and Complementary Feeding Practices and their Relationship with Nutritional Status Among Children 6-23 Months Old in Pastoral Community of Marsabit Country, Kenya: A Cross-Sectional Study. Curr Res Nutr Food Sci 2020; 8(3).
Doi:http://dx.doi.org/10.12944/CRNFSJ.8.3.17

Mukherjee A, Paul S, Saha I, Som TK, Ghose G.
Dietary diversity and its determinants: A community-based study among adult population of Durgapur, West Bengal.
Med J DY Patil Vidyapeeth 2018;11:296-301.

NFHS 4 GUJARAT FACT SHEET (2015-2016)

NFHS 4 INDIA FACT SHEET (2015-2016)

NFHS 4 BHARUCH FACT SHEET (2015-2016)

NFHS 5 GUJARAT FACT SHEET (2019-2020)

NFHS 5 BHARUCH FACT SHEET (2019-2020)

National Nutrition Monitoring Bureau (NNMB) Rural Data (2001-02)

National Nutrition Monitoring Bureau (NNMB) Rural Data (2005-06)

National Nutrition Monitoring Bureau (NNMB) Rural Data (2011-2012)

National Nutrition Monitoring Bureau (NNMB) Tribal Data (2008-09)

NANCY F. BUTTE, PhD, RD; MARY KAY FOX, MEd; RONETTE R. BRIEFEL, DrPH, RD; ANNA MARIA SIEGA-RIZ, PhD, RD; JOHANNA T. DWYER, DSc, RD; DENISE M. DEMING, PhD; KATHLEEN C. REIDY, DrPH, RD
Nutrient Intakes of US Infants, Toddlers, and Preschoolers Meet or Exceed Dietary Reference Intakes
American Dietetic Association doi: 10.1016/j.jada.2010.09.004

Neme K, Olika E (2017)
Knowledge and Practices of Complementary Feeding Among Mothers/Caregivers of Children Age 6 to 23 Months in Horo Woreda, Horo Guduru Wollega Zone, Oromia Region, Ethiopia.
J Biomed Res Rev 1: 1 (01-10).

Rao S, Swathi PM, Unnikrishnan B, Hegde A.
Study of Complementary Feeding Practices among Mothers of Children Aged Six Months to Two Years – A Study from Coastal South India.
AMJ 2011, 4, 5, 252-257 http//dx.doi.org/10.4066/AMJ.2011.607

Rakotonirainy NH, Razafindratovo V, Remonja CR, Rasoloarijaona R, Piola P, Raharintsoa C, et al. (2018)
Dietary diversity of 6- to 59-month-old children in rural areas of Moramanga and Morondava districts, Madagascar. PLoS ONE 13(7): e0200235. https://doi.org/ 10.1371/journal.pone.0200235

Sethi V, Bhanot A, Bhalla S, et al. (2017)
Partnering with women collectives for delivering essential women's nutrition interventions in tribal areas of eastern India: a scoping study. Journal of Health, Population, and Nutrition.
36:20. doi:10.1186/s41043-017-0099-8.

Sabreen B, Sunil Agrawal, Rajesh Vaidya, MPS Marwaha, Bhupinder Kaur Anand, Rajat Kumar Garg.
A study of complementry feeding practices amongst mothers of children aged six months to two years attending an immunisation clinic.
International Journal of Contemporary Medical Research 2019;6(4):D9-D12

Shweta Marathe and Deepali Yakkundi (2017)
Complementary Feeding Practices amongst Children Aged 6-18 Months in Tribal Parts of Maharashtra, India - Requires to be Complemented Aptly
Article no.IJTDH.32906, DOI: 10.9734/IJTDH/2017/32906

Sirawdink Fikreyesus Forsido, Nejat Kiyak, Tefera Belachew and Oliver Hensel (2019)
Complementary feeding practices, dietary diversity, and nutrient composition of complementary foods of children 6–24 months old in Jimma Zone, Southwest Ethiopia
Journal of Health, Population and Nutrition (2019) 38:14 https://doi.org/10.1186/s41043-019-0172-6

Srivasatava G, Bhatnagar S, Khan KA.
Complementary feeding practices of children (6 months-23 months) in and around Lucknow, India.
Int J Contemp Pediatr 2018;5:114-8.

Sandhya Rani Javalkar
Assessing WHO's IYCF Indicators in Mangalore TalukA Cross sectional Study
Indian Journal of Public Health Research & Development, June 2019, Vol.10, No. 6
DOI Number: 10.5958/0976-5506.2019.01242.7

Sanghvi T, Seidel R, Baker J, Jimerson A.
Using behaviour change approaches to improve complementary feeding practices.
Matern Child Nutri. 2017;13(S2):e12406. https://doi.org/10.1111/mcn.12406

Sutapa Agrawal, Rockli Kim, Jewel Gausman, Smriti Sharma, Rajan Sankar, William Joe, S. V. Subramanian
Socio-economic patterning of food consumption and dietary diversity among Indian children: evidence from NFHS-4
European Journal of Clinical Nutrition (2019) 73:1361–1372 https://doi.org/10.1038/s41430-019-0406-0

Transforming nutrition in India: Poshan Abhiyaan- A progress report 2019

Ty Beal, Jessica M. White, Joanne E. Arsenault, Harriet Okronipa, Guy-Marino Hinnouho, and Saul S. Morris
Comprehensive Nutrient Gap Assessment (CONGA): A method for identifying the public health significance of nutrient gaps
Nutrition ReviewsVR Vol. 79(S1):4–15doi: 10.1093/nutrit/nuaa140

Trivedi BY, Vyas SN, Dave BS, Desai KA.
Complementary feeding practices among mothers of Waghodia Taluka of Vadodara: a knowledge, attitude, and practice study. Int J Med Sci Public Health 2015;4:647-651

UNICEF Programming Guidance

United Nations Children's Fund (UNICEF). Improving Young Children's Diets During the Complementary Feeding Period. UNICEF Programming Guidance. New York: UNICEF, 2020.

UNICEF-Global Annual Results Report 2018

Every child survives and thrives.

UNICEF global databases Infant and Young Child Feeding, 2019

Vani Sethi, Arti Bhanot, Surbhi Bhalla, Sourav Bhattacharjee, Abner Daniel, Deepika Mehrish Sharma, Rajkumar Gope and Saba Mebrahtu
Partnering with women collectives for delivering essential women's nutrition interventions in tribal areas of eastern India: a scoping study
Journal of Health, Population and Nutrition (2017) 36:20 DOI 10.1186/s41043-017-0099-8

World Health Organization and the United Nations Children's Fund (UNICEF), 2021
Indicators for assessing infant and young child feeding practices: definitions and measurement methods

Yonas, F., Asnakew, M., Wondafrash, M. and Abdulahi, M. (2015)
Infant and Young Child Feeding Practice Status and Associated Factors among Mothers of under 24-Month-Old Children in Shashemene Woreda, Oromia Region, Ethiopia.
Open Access Library Journal, 2: e1635. http://dx.doi.org/10.4236/oalib.1101635

Zainab Taha , Malin Garemo and Joy Nanda
Complementary feeding practices among infants and young children in Abu Dhabi, United Arab Emirates
BMC Public Health (2020) 20:1308 https://doi.org/10.1186/s12889-020-09393-y

Appendices

Appendix-1 Request letter

AATAPI आतापी

Date: 1/12/2020

To,
Dr Hemangini Gandhi,
Assistant Professor,
Department of Foods and Nutrition,
Faculty of Family and Community Sciences,
M.S.University, Vadodara

Subject: Letter of invitation for joint Research on Maternal and Child Health indicators in Jambusar Block

Dear Dr Hemangini,

It is our pleasure to collaborate with Department of Foods and Nutrition, Faculty of Family and Community Sciences for a research on topic of immense importance.

As you are well aware, Aatapi is a development institution working towards integrated rural development through community engagement. We are engaged in 53 villages with 7500 families in Jambusar and Ankleshvar block, Bharuch district with issues of livelihood development, health and well being as well as holistic development of children of the area. With regard to MIYCN activities, at present we are working with 15 AWCs of Gajera block and we have our 06 Arogya sathis.

We have earlier collaborated with department through students engagement in the area of maternal and child health in month of February- March 2020 and it is been a positive experience.

In view of your experience and interest in Public Health Nutrition for community at large through research and extension work, we take this opportunity to request you to plan joint research in the area of MIYCN under your guidance for current year's masters dissertation. Findings of this research work will definitely help in planning future interventions by our organization to achieve targets of POSHAN Abhiyan by 2022.

Looking forward for the collaborative activities.

Thanks and regards,

Dr. Nandini Srivastava
CEO
Aatapi Seva Foundation,
Gandhi Darwaja, Lal Bunglow,
Gajera, Jambusar,
Bharuch-391810
GUJARAT
Phone : 9825511652

Aatapi Seva Foundation
Gandhi Darwajo, At Post-Gajera, Block-Jambusar, Dist.-Bharuch 391 810, Gujarat, India. Tel : +91 2644 233171, www.aatapi.org E-mail : aatapi09@gmail.com
Regd. Office : 301, 'B' Tower, Alkapuri Arcade, R. C. Dutt Road, Vadodara-390 007, Gujarat, India. Tel : +91 265 234 3302/04. Fax: +91 265 233 7361
CIN-U85100GJ2009NPL058533 PAN-AAICA1071G 80G Reg. No. BRD/AA-I/MAIN/80G/(134/120)/2009-10 dtd: 25-03-2010
aatapi@aatapi.org

Appendix - 2

૬-૨૩ મહિના બાળક ની માતા માટે ઉપરી આહાર ની માહિતી માટે પ્રશ્નાવલિ

ડિપાર્ટમેંટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન
ફેકલ્ટિ ઓફ ફેમિલી એન્ડ કમ્યૂનિટી સાયન્સીસ
ધ મહારાજા સયાજીરાવ યુનિવર્સિટિ ઓફ બરોડા

ફોર્મ નંબર: -	તારીખ: - / /

ફોર્મ ભરનારનું નામ:- _____જિલ્લો:- _____

તાલુકો:-_____ ગામ :- _____

આંગણવાડી નામ અને નંબર:- _____

<u>સામાજિક સ્થિતિ</u>	
1. માતાનું નામ (પરિવારમાં 6-23 મહિનાની બાળકની માતા)	
2. માતાની શૈક્ષણિક લાયકાત	1.અશિક્ષિત 2.વાચતા લાખતા આવડે 3. પ્રાથમિક 4. માધ્યમિક 5.સ્નાતક 6. અનુસ્નાતક 7. કોઈપણ અન્ય(જણાવો)_____
3. જ્ઞાતિ	1.અનુસુચિત જનજાતિ (એસ.ટી) 2.અનુસુચિતજાતિ(એસ.સી) 3.પછાત વર્ગ (ઓબીસી) 4.સામાન્ય
4. આર્થિક સ્થિતિ	1. એ.પી.એલ. 2. બી.પી.એલ.
5. કુટુંબનો પ્રકાર	1. સંયુક્ત 2. વિભક્ત 3. વિસ્તૃત
6. ઘરનો મુખ્ય વ્યવસાય	1.બેરોજગાર 2. ખેત મજૂરી 3.છૂટક મજૂરી 4.કૌટુંબિક વ્યવસાય 5.સરકારી નોકરી 6.ખાનગી નોકરી 7. સ્વ રોજગારી 8. અન્ય જાણાવો_____
7. શુ બાડક ના માતા કે પિતા આપેલ જુથ મા જોડાયેલ છે?	1. સ્વ સહાય જુથ 2. એફ.પી.ઓ.
8. માતાનો વ્યવસાય	1. ગૃહિણી 2.બેરોજગાર 3. ખેત મજૂરી 4.છૂટક મજૂરી 5.કૌટુંબિક વ્યવસાય 6.સરકારી નોકરી 7.ખાનગી નોકરી 8. સ્વ રોજગારી 9.અન્ય જણાવો_____
9. કુટુંબના સભ્યોની કુલ સંખ્યા	
10. પરિવારમાં 6-23 મહિનાની બાળકની કુલ સંખ્યા	
11. શુ પરીવાર માં કોઇ પણ સદસ્ય ને કોઇ પણ પ્રકાર નુ ખોડ ખાપડ છે?	1. હા 2. ના

બાળક નું નામ :-_____જન્મ તારીખ :-_____ ઉમર :-_____જાતિ :- 1.બાળક 2.બાળકી કેટલામું જીવિત બાળક છે? _____

12. શારીરિક માપદંડ	1. લંબાઈ (સે.મી):____ 2. વજન (કિલો):_____ 3. બાવડા ના મધ્ય ભાગ ના ઘેરાવનું માપ(સે.મી.):____ 4. જન્મ સમય વજન(કિલો):___- (મમતા કાર્ડ તપાસો)

<u>સગર્ભા સમય ની માહિતી</u>	
13. સુવાવડ નો પ્રકાર? (જે બાળક ની માહિતી લખાવી છે તેની સુવાવડ વિશે પૂછવું)	1. સામાન્ય 2. સિઝેરિયન 3.અન્ય
14. સુવાવડ કયાં કરવામાં આવી હતી?	1.પેટા કેન્દ્ર 2.પી.એચ.સી 3.સી.એચ.સી 4.સરકારી દવાખાનું 5.ખાનગી દવાખાનું 6.ચિરંજીવી દવાખાનું 7.અન્ય જણાવો _____
<u>આઈ.સી.ડી.એસ. સેવાઓ નો ઉપયોગ વિશે માહિતી</u>	
15. શું તમારા બાળક નું નામ નજીકના આંગણવાડી કેન્દ્ર માં નોંધાયેલું છે?	1. હા 2. ના
16. શું તમે આંગણવાડી કેન્દ્રની મુલાકાત લો છો?	1. હા 2. ના
17. જો હા, તો કેટલી વાર?	1. અઠવાડિયામાં એકવાર 2. 15 દિવસમાં એકવાર 3. એક મહિનામાં એકવાર 4. કોઈપણ અન્ય
18. શું તમે અન્નપ્રાશન દિવસ વિશે જાણો છો?	1. હા 2. ના
19. તમારા આંગણવાડી કેન્દ્રમાં અન્નપ્રાશન દિવસની ઉજવણી ક્યારે કરવામાં આવે છે?	1. ત્રિજો મંગળવાર 2. ખબર નથી 3. કોઈપણ અન્ય (જણાવો) _____
20. શું તમે અન્નપ્રાશન દિવસમાં હાજરી આપો છો?	1. હા 2. ના
21. જો હા, તો કઇ કઇ પ્રવૃત્તિઓ કરવામાં આવે છે?	1. છ મહિના પુરા થયા પછી બાળક ને શું ખવડાવું, કેટલી વાર ખવડાવું, કેવી રીતે ખવડાવું તેની માહિતી 2. બાલશક્તિ પેકેટ માથી બનેલી વાનગીનું નિર્દેશન 3. બાલશક્તિ ની રાબ બનાવી ખવડાવે 4. અન્ય (જણાવો) _____
22. તમને બાલ શક્તિ ના પેકેટ મળે છે?	1. હા 2. ના
23. જો હા, તો મહિના માં કેટલા પેકેટો મળે છે?	1. 7 પેકેટ્સ 2. 10 પેકેટ્સ 3. અન્ય(જણાવો) _____
24. જો હા, તો કેટલી વાર?	1. અઠવાડિયે 2. મહિને 3. ત્રણ મહિને 4. અન્ય(જણાવો) __
25. બાલ શક્તિના પેકેટ કોણ આપે છે?	1. આંગણવાડી કાર્યકર 2.આશા 3.નર્સબેન 4.અન્ય કોઈ_____
26. જો ના, તો તમને કેમ નથી મળતું?	1. THR લેવા નથી જતા 2.આંગણવાડી કેન્દ્ર માંથી નથી મળતું 3. આંગણવાડી બંધ રહે 4.કોઈપણ અન્ય સ્પષ્ટ કરો _____

27. બાલ શક્તિ માંથી વાનગીઓ કેવી રીતે બનાવાની એ માટે કોઈ વાનગી નિર્દેશન કરવામા આવ્યુ હતું?	1. હા 2. ના
28. જો હા, તો પછી કોણે નિર્દેશન કર્યું?	1. આંગણવાડી કાર્યકર 2.આશા 3.અન્ય કોઈ(જણાવો)_____
29. જો હા, તો નિર્દેશન ક્યારે આપ્યું હતું?	1. અન્નપ્રાશન દિવસ 2. અન્ય કોઈ દિવસે_____
30. શું તમારા ઘરમાં પોષણ વાટિકા છે?	1. હા 2. ના
31. જો હા, પોષણ વાટિકા શરૂ કરવા માટે કોને સલાહ આપી હતી?	
32. શું તમે પોષણ વાટિકા માંથી ઉગાવામાં અવેલ વસતુઓ ઉપરી આહાર માં વાપ્રો છો?	1. હા 2. ના
33. તમે પોષણ વાટિકા માં કઈ કઈ વસતુઓ ઉગાવો છો?	
<u>ઉપરી આહાર વિશે</u>	
34. સ્તનપાન ક્યારે શરૂ કર્યું હતું?	1. જન્મના 1 કલાકની અંદર 2. જન્મના 1 દિવસની અંદર 3. કોઈપણ અન્ય____
35. શું સ્તનપાન શરૂ કર્યા પહેલા કોઈ ખાવાની વસ્તુ આપી હતી?	1. હા 2. ના
36. જો હા, તો પછી શું આપવામાં આવ્યું હતું?	1. પાણી 2. મધ 3. ઉપરનું દૂધ 4. કોઈપણ અન્ય સ્પષ્ટ કરો____
37. કેટલા મહિના સુધી બાળક ને ફક્ત ને ફકત સ્તનપાન કરાવામા આવ્યું હતું?	1. ૪ મહિના 2. ૬ મહિના 3. ૮ મહિના 4. કોઈપણ અન્ય સ્પષ્ટ
38. શું તમે હાલમાં તમારા બાળકને સ્તનપાન કરાવો છો ?	1. હા 2. ના
39. જો હા, તો પછી દિવસમાં કેટલી વાર બાળકને સ્તનપાન કરાવવામાં આવે છે?	
40. શું તમે રાત્રે બાળકને સ્તનપાન કરાવો છો ?	1. હા 2. ના
41. બાળકને કઈ ઉંમરે ઉપરી આહાર આપવાની શરૂઆત કરવામાં આવી હતી?	1. ૪ મહિના 2. ૬ મહિના કરતા ઓછા 3. ૬ મહિના પૂર્ણ થતાં 4. ૮ મહિના 5. કોઈપણ અન્ય (સ્પષ્ટ)
42. તમે તમારા બાળકને ક્યારે ઉપરી આહાર આપવાની શરૂઆત કરી હતી?	1. બાળક તેના / તેના પેટ ઉપર ખસેડવાનું શરૂ કર્યું 2. બાળક ટેકો લઈને બેસવા લાગ્યો 3. બાળક ટેકે વગર બેસવા લાગ્યો 4. ક્રોલિંગ શરૂ કર્યું 5. ટેકો લઈને ઉભો થયો 6. કોઈપણ અન્ય (સ્પષ્ટ)_____
43. ઉપરી આહાર શરૂ કરવા માટે કોને સલાહ આપી હતી?	1.ઘર ના સભ્યો 2.આંગણવાડી કાર્યકર 3.આશા 4.નર્સબેન 5. અન્ય સ્તનપાન કરાવતી માતાઓ 6. ડોક્ટર 7. સ્વૈચ્છિક સંગઠન ના કાર્યકર 8. પોતે 9.રેડિયો સંદેશ 10. અન્ય (જણાવો)_____
44. પહેલી વાર ઉપરી આહાર ક્યાં આપવામાં આવ્યું હતું?	1. ઘરે 2. આંગણવાડી કેન્દ્ર માં અન્નપ્રાસનના દિવસે 3. કોઈપણ અન્ય (જણાવો)_____
45. પહેલી વખત ઉપરી આહાર માં શું આપ્યુ હતું ?	1. બાલ શક્તિ 2.બિસ્કિટ 3.ઘર **નો** ખોરાક 4.અન્ય (જણાવો)__
46. તમે સાબુથી હાથ ધુઓ છો?	1. હા 2. ના

47. જો હા, તો ક્યારે ક્યારે?	1. ખોરાક તૈયાર કરતા પહેલા 2. ખોરાક તૈયાર કર્યા પછી 3. બાળકના મળ સાફ કર્યા પછી 4. બાળકને ખોરાક આપતા પહેલા 5. બાળકને ખવડાવ્યા પછી 6. ઉપરોક્ત તમામ
48.બાળકને ખવડાવતા સમયે તમે કઈ કઈ કાળજી રાખો છો?	1. માતા અને બાળક બંને હાથ ધુએ 2. ચમચી /વાટકી સાફ કરવી 3. ખોરાકનું તાપમાન (ખૂબ ગરમ / ઠંડા નથી) 4. ખોરાક વાસી ન હોવો જોઈએ 5. ખાવા માટ જબરદસ્તિ કર્તા નથી 6. પીવાનું પાણી સ્વચ્છ 7. ઉપરોક્ત તમામ 8. કોઈપણ અન્ય (જણાવો)_____
49. બાળકને પાણી આપતા પહેલા તમે કઈ સાવચેતી રાખો છો?	1. પાણી ગરમ કર્યા પછી ઠંડુ કરીને આપવું 2. શુધ્ધ પાણી 3. ઘર માં જે પાણી હોય એ 4. કોઈપણ અન્ય (જણાવો)___
50. શું બાળકને ઉપર નું દૂધ આપવામાં આવે છે?	1. હા 2. ના
51. જો હા, તો કેટલી વાર?	1. <૨ વખત 2. ૨ વખત 3. ૩-૫ વખત 4. > ૬ વખત 5. કોઈપણ અન્ય (જણાવો)_____
52. જો હા, તો કયું દૂધ?	1. ગાય 2. ભેંસ 3.બકરી 4.કોઈપણ અન્ય (સ્પષ્ટ કરો)
53. શું તમે તમારા બાળકને બાલશક્તિ આપો છો?	1. હા 2. ના
54. જો હા, તો પછી તમે બાલ શક્તિ માંથી શું બનાવો છો?	1. રાબ 2. શીરો 3. સુખડી 4. કોઈપણ અન્ય(જણાવો)_____
55. શું તમારું બાળક બાલશક્તિ ખાય છે?	1. હા 2. ના
56. જો નહીં, તો શા માટે?	1. બાળક ને ભાવતું નથી 2. મને ભાવતું નથી 3. બાળક ને ઝાડા થઈ જાય છે 4. કોઈપણ અન્ય(જણાવો)___
57. શું બાલ શક્તિ પરિવારના અન્ય સભ્યો દ્વારા પણ ખાવા માં આવે છે?	1. હા 2. ના

ફક્ત ૬-૮ મહિનાના બાળકો માટે પૂછવું	
58. હાલમાં, તમે તમારા બાળકને ધાવણની સાથે ઉપરી ખોરાક કેટલી વખત આપો છો?	1. ૨-૩ વખત 2. ૫ વખત 3. માંગે ત્યારે 4. કોઈપણ અન્ય(જણાવો)_____
59. એક વખતે કેટલું આપો છો? (સ્પુન બતાવો)	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____
60. પૂરક ખોરાકમાં કેવો ખોરાક આપો છો?	1. અર્ધ ઘટ્ટ મસળેલો 2.પ્રવાહી 3. કોઈપણ અન્ય(જણાવો)_____
61. તમે બાળકને પૂરક ખોરાકમાં શું શું ખવડાવો છો?	1. અનાજ અને કંદમૂળ 2. કઠોળ અને સૂકો મેવો 3. દૂધ અને દૂધ ની બનાવટો 4. માંસ 5. ઇંડા 6. વિટામિન એ થી ભરપુર ફળો અને શાકભાજી 7. અન્ય ફળો અને શાકભાજી 8. પેકેટ (બિસ્કિટ, વેફર, વગેરે) જણાવો_____
62. શું તમારું બાળક નિયમિતપણે બાલ શક્તિ ખાય છે?	1. હા 2. ના
63. જો હા, તો દિવસમાં કેટલી વાર?	
64. એક વખતે કેટલું બાલ શક્તિ આપો છો?	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____

ફક્ત ૯-11 મહિનાના બાળકો માટે પૂછવું	
65. હાલમાં, તમે બાળકને કેટલી વખત પૂરક ખોરાક આપો છો?	1. 3-4 વખત 2. 5 વખત 3. માંગે ત્યારે 4. કોઈપણ અન્ય (જણાવો)_____
66. એક વખતે કેટલું આપો છો? (સ્પુન બતાવો)	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____
67. પૂરક ખોરાકમાં કેવો ખોરાક આપો છો?	1. કઠણ 2. અર્ધઘટ્ટ મસળેલુ ખોરાક 3. કોઈપણ અન્ય (જણાવો)_____
68. તમે બાળકને પૂરક ખોરાકમાં શું શું ખવડાવો છો?	1. અનાજ અને કંદમૂળ 2. કઠોળ અને સૂકો મેવો 3. દૂધ અને દૂધ ની બનાવટો 4. માંસ 5. ઇંડા 6. વિટામિન એ થી ભરપુર ફળો અને શાકભાજી 7. અન્ય ફળો અને શાકભાજી 8. પેકેટ (બિસ્કિટ, વેફર, વગેરે) જણાવો_____
69. શું તમારું બાળક નિયમિતપણે બાલ શક્તિ ખાય છે?	1. હા 2. ના
70. જો હા, તો દિવસમાં કેટલી વાર?	
71. એક વખતે કેટલું બાલ શક્તિ આપો છો?	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____

ફક્ત **12-23** મહિના બાળકો માટે પૂછવું	
72. હાલમાં, તમે બાળકને કેટલી વખત પૂરક ખોરાક આપો છો?	1. 4-5 વખત 2. 5 વખત 3. માંગે ત્યારે 4. કોઈપણ અન્ય(જણાવો)_____
73. એક વખતે કેટલું આપો છો? (સ્પુન બતાવો)	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____
74. પૂરક ખોરાકમાં કેવો ખોરાક આપો છો?	1. કઠણ 2. અર્ધઘટ્ટ મસળેલુ ખોરાક 3. કોઈપણ અન્ય (જણાવો)_____
75. તમે બાળકને પૂરક ખોરાકમાં શું શું ખવડાવો છો?	1. અનાજ અને કંદમૂળ 2. કઠોળ અને સૂકો મેવો 3. દૂધ અને દૂધ ની બનાવટો 4. માંસ 5. ઇંડા 6. વિટામિન એ થી ભરપુર ફળો અને શાકભાજી 7. અન્ય ફળો અને શાકભાજી 8. પેકેટ (બિસ્કિટ, વેફર, વગેરે) જણાવો_____
76. શું તમારું બાળક નિયમિતપણે બાલ શક્તિ ખાય છે?	1. હા 2. ના
77. જો હા, તો દિવસમાં કેટલી વાર?	
78. એક વખતે કેટલું બાલ શક્તિ આપો છો?	1. C1 2. C2 3. C3 4. C4 5. કોઈપણ અન્ય (સ્પષ્ટ)_____

આગળના દિવસે બાળકે ખાધેલ ખોરાક ની વિગત

1. આહારનો પ્રકાર: (1) શાકાહારી (2) માંસાહારી (3) શાકાહારી પણ ઇંડા ખાય
2. (આઇ.સી.ડી.એસ. હેઠળ આપવામાં આવેલ બાલ શક્તિ વિશે અને સ્તનપાન વિશે પૂછો) દિવસ દરમિયાન આપવામાં આવતી પેક્ડ વસ્તુઓ / સુગરયુક્ત પીણાઓ વિશે પણ પૂછો અને નામ અને જથ્થો સાથે તેનો ઉલ્લેખ કરો - દા.ત. બિસ્કિટ, વેફર, કોલ્ડ ડ્રિંક વગેરે.

દિવસ ૧ **તારીખ / /**

કેટલા વાગે	**શું ખવડાવ્યુ**	**વાનગી શેમાં થી બનાવેલ છે?**	**પ્રમાણ**
(દા. ન. સવારે ૭ વાગે)	ભાખરીનો ટુકડો, ચા	ઘઉનો લોટ, તેલ , મીઠું દુધ, ચા, ખાંડ	(સ્ટાન્ડેડ કપ માં) ચોથો ભાગ, એક ચમચી
બાલશક્તિ માંથી તૈયાર કરેલ વસ્તુઓ			
કોઈપણ અન્ય (બિસ્કીટ, વેફર, કોલ્ડ ડ્રિંક્સ, ભુગળા, સેવ નું પેકેટ, ચવાનુ પેકેટ)			
કેટલી વાર ધાવણ આપ્યું?			

દિવસ ૨ **તારીખ / /**

કેટલા વાગે	**શું ખવડાવ્યુ**	**વાનગી શેમાં થી બનાવેલ છે**?	**પ્રમાણ**
બાલશક્તિ માંથી તૈયાર કરેલ વસ્તુઓ			
કોઈપણ અન્ય (બિસ્કીટ, વેફર, કોલ્ડ ડ્રિંક્સ, ભુગળા, સેવ નું પેકેટ, યવાનુ પેકેટ)			
કેટલી વાર ધાવણ આપ્યું?			

દિવસ ૩ **તારીખ / /**

કેટલા વાગે	**શું ખવડાવ્યુ**	**વાનગી શેમાં થી બનાવેલ છે?**	**પ્રમાણ**
બાલશક્તિ માંથી તૈયાર કરેલ વસ્તુઓ			
કોઈપણ અન્ય (બિસ્કીટ, વેફર, કોલ્ડ ડ્રિંક્સ, ભુગળા, સેવ નું પેકેટ, ચવાનુ પેકેટ)			
કેટલી વાર ધાવણ આપ્યું?			

Appendix - 3

ફ્રંન્ટલાઇન કાર્યકર (આંગણવાડી કાર્યકર /આશા/આરોગ્ય સાથી) માટે ની પ્રશ્નાવલિ

ડિપાર્ટમેંટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન
ફેકલ્ટિ ઓફ ફૅમિલી એન્ડ કમ્યૂનિટી સાયન્સીસ
ધ મહારાજા સયાજીરાવ યુનિવર્સિટી ઓફ બરોડા

ફોર્મ નંબર:		તારીખ:
માહિતી ભરનાર નું નામ:		જિલ્લો:
તાલુકો:		ગામનું નામ:
આંગણવાડી કેન્દ્રનું નામ:		આંગણવાડી કેન્દ્ર નંબર:
1.	જવાબ આપનાર નું નામ:	
2.	જવાબ આપનાર નું હોદ્દો:	1. આંગણવાડી કાર્યકર 2. આશા 3. આરોગ્ય સાથી
3.	શિક્ષણ સ્તર:	1. નિરક્ષર 2. પ્રાથમિક 3. માધ્યમિક 4. સ્નાતક 5. અનુસ્નાતક 6. અન્ય
4.	અનુભવ (વર્ષ માં):	
5.	કુલ કેટલા ઘરો માટે તમે કામ કરો છો?	
6.	કોઈ તાલીમ મળેલ છે?	1. હા 2. ના
7.	જો, હા તો કયા મુદ્દા પર મળેલ છે?	1. પહેલા હજાર દિવસ 2. પરામર્શ કરવાની ની આવડત 3. વાનગી નિદર્શન 4. ઉમર પ્રમાણે ઉપરી આહાર 5. પોષણ વાટિકા 6. અન્ય.....
8.	શું તમે ઉમર પ્રમાણે ઉપરી આહાર માટે પરામર્શ આપો છો ?	1. હા 2. ના

ગાંધી અને ઠાકુર ૨૦૨૦

9.	જો, હા તો ક્યા આપવામાં આવે છે?	1. મમતા દિવસે 2. સુપોષણ દિવસ 3. અન્નપ્રાશન દિવસ 4. અન્નવિતરણ દિવસ
10.	જો, હા તો ક્યારે આપવામાં આવે છે?	1. અઠવાડિયે 2. ૧૫ દિવસ માં એક વાર 3. મહિના માં એક વાર 4. અન્ય જણાવો.....
11.	પરામર્શ દરમિયાન કયા કયા મુદ્દાઓ ની ચર્ચા કરવા માં આવે છે?	1. ઉપરી આહાર નું મહત્વ 2. ઉમંર પ્રમાણે ઉપરી આહાર 3. સ્તનપાન ચાલુ રાખો 4. ઉમંર પ્રમાણે ઉપરી આહાર ની માત્રા 5. ઉપરી આહાર ની ગુણવત્તા અને ખોરાક માં વિવિધતા અને ખોરાક ને સંગ્રહ કેવી રીતે કરવાનું 6. ઉમંર પ્રમાણે કેટલી વાર ઉપરી આહાર આપવો 7. બાલ શક્તિ નો વપરાશ અને વાનગીઓ 8. ઉપરી આહાર માટે વાનગી નિદર્શન 9. સક્રિય ખોરાક પ્રતિસાદ 10. પોષણ વાટિકા માં ઉગેલ વસ્તુઓનો વપરાશ 11. હાથ ધોવાની ની ટેવો 12. આંગનવાડી કેન્દ્ર માં અન્નપ્રાશન દિવસ માં
	ઉપરી આહાર વિષે ની માહિતી	
12.	ઉપરી આહાર શું છે?	1. ૬ મહિના પછી બાળક ને સ્તનપાન સાથે કોઈ પણ ખોરાક આપવામાં માં આવે 2. અન્નપ્રાશન દિવસ પર બાળક ને બાલશક્તિ આપવામાં આવે 3. ખબર નથી 4. અન્ય જણાવો .....
13.	કઈ ઉમરે બાળક ને ઉપરી આહાર નું શરૂઆત કરવી જોઇયે ?	1. ચાર મહિને 2. ૬ મહિના થી પેહલા 3. ૬ મહિના પૂરા થયા પછી 4. ૮ માં મહિને 5. અન્ય જણાવો .....

14.	બાળક ને ઉપરી આહાર સાથે કયા સુધી સ્તનપાન ચાલુ રાખવું જોઇયે ?	1. ૧ વર્ષ 2. ૨ વર્ષ 3. ૨ વર્ષ થી વધારે 4. અન્ય જણાવો .....
15.	ઉપરી આહાર માં કયા કયા ખોરાક ના જૂથો ઉમેરવા જોઇયે ?	1. અનાજ અને કંદમૂળ 2. દાળ, કઠોળ અને તેલીબીયા 3. દૂધ અને દૂધ ની બનાવટો 4. માંસાહારી ખોરાક 5. ઈંડા 6. વિટામિન એ થી ભરપૂર ફળો અને શાકભાજી 7. અન્ય ફળો અને શાકભાજી
16.	૬-૮ મહિના ના બાળક ને દિવસ માં કેટલી વાર ઉપરી આહાર આપવો જોઇયે?	1. ૨-3 વાર 2. જેટલી વાર માગે 3. અન્ય જણાવો .....
17.	૬-૮ મહિના ના બાળક ને ૧ વાર માં ઉપરી આહાર ની કેટલી માત્રા આપવી જોઇયે?	1. C1 2.C2 3. C3 4.C4 5.અન્ય જણાવો.....
18.	૯-૧૧ મહિના ના બાળક ને દિવસ માં કેટલી વાર ઉપરી આહાર આપવો જોઇયે?	1. 3-૪ વાર 2. જેટલી વાર માગે 3. અન્ય જણાવો .....
19.	૯-૧૧ મહિના ના બાળક ને ૧ વાર માં ઉપરી આહાર ની કેટલી માત્રા આપવી જોઇયે?	1. C1 2.C2 3.C3 4.C4 5. અન્ય જણાવો....
20.	૧૨-૨૩ મહિના ના બાળક ને દિવસ માં કેટલી વાર ઉપરી આહાર આપવો જોઇયે?	1. ૪-૫ વાર 2. જેટલી વાર માગે 3. અન્ય જણાવો .....
21.	૧૨-૨૩ મહિના ના બાળક ને ૧ વાર માં ઉપરી આહાર ની કેટલી માત્રા આપવી જોઇયે?	1. C1 2.C2 3.C3 4.C4 5. અન્ય જણાવો.....
22.	૬-૨૩મહિના ના બાળક ને કેવો ખોરાક આપવો જોઇયે?	1. ઘટ્ટ 2. મસળેલું અને અર્ધઘટ્ટ 3. અન્ય જણાવો.....
23.	ઉપરી આહાર બનાવતી/ખવડાવતી વખતે શું કાળજી લેવી જોઇયે?	1. માતા અને બાળક ના હાથ સાબુ થી ધોવા જોઇયે 2. કટોરી/ચમચી ધોવેલા અને તાપ માં સુકેલા જોઇયે 3. ખોરાક ખૂબ ગરમ/ઠંડો ન હોવો જોઇયે 4. ખોરાક વાસી ન હોવો જોઇયે

		5. પીવાનું પાણી ચોખું હોવું જોઇએ 6. ઉપરોક્ત માથી તમામ 7. અન્ય જણાવો.....
24.	બાળક ને ખોરાક કેવી રીતે આપવો જોઈએ?	1. માતા ની થાળી માં 2. ઘર ના બીજા બાળકો જોડે 3. જુદી વાડકી માં 4. અન્ય જણાવો.....
25.	શું તમે જાણો છો સાબુ થી હાથ ક્યારે ક્યારે ધોવા જોઇએ?	1. ખોરાક બનાવતા પહેલા 2. ખોરાક બનાવ્યા પછી 3. બાળક ના મળ અને પેશાબ સાફ કર્યા પછી 4. બાળક ને ખવડાવતા પહેલા 5. બાળક ને ખવડાવ્યા પછી
26.	શું તમે હાથ ધોવા ની સાચી રીતો જાણો છો?	1. હા 2. ના
27.	શું તમે અન્નપ્રાશન દિવસ વિષે જાણો છો?	1. હા 2. ના
28.	શું તમે જાણો છો તમારી આંગણવાડી કેન્દ્ર પર અન્નપ્રાશન ક્યારે ઉજવા માં આવે છે?	1. ત્રીજા મંગળવારે 2. અન્ય જણાવો.....
29.	શું તમને અન્નપ્રાશન દિવસ નું મહત્વ જાણો છો?	1. હા 2. ના
30.	જો, હા તો સ્પષ્ટ કરો	
31.	શું તમે બાલશક્તિ પેકેટ વિષે જણો છો?	1. હા 2. ના
32.	દર મહિને કેટલા પેકેટ આપવા જોઇએ?	1. ૭ પેકેટ 2. ૧૦પેકેટ 3. અન્ય જણાવો.....
33.	શું તમે પોષણ વાટિકા નું મહત્વ જાણો છો?	1. હા 2. ના
34.	જો હા, તો પછી ઘરેલું સ્તરે પૂરક ખોરાક સુધારવામાં તે કેવી રીતે મદદ કરી શકે?	
35.	તમારા વિસ્તારમાં, સામાન્ય રીતે ક્યાંરે ઉપરી આહાર ની શરૂઆત કરવામાં આવે છે?	
36.	તમારા મુજબ તમારા વિસ્તારમાં ઉપરી આહાર ની વહેલી અથવા મોડી શરૂઆતના કારણો શું છે?	
37.	તમારા વિસ્તાર માં નાના બાળકોને પૂરક ખોરાક તરીકે કઇ ખાદ્ય પદાર્થો આપવામાં આવે છે?	

Appendix - 4

ડિસ્ટ્રીક પ્રોફાઈલ

ડિપાર્ટમેંટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન
ફેકલ્ટિ ઓફ ફૅમિલી એન્ડ કમ્યૂનિટી સાયન્સીસ
ધ મહારાજા સયાજીરાવ યુનિવર્સિટિ ઓફ બરોડા

તારીખ: ..... માહિતી લેનાર નું નામ: .....

માહિતી આપનાર નું નામ: .....માહિતી આપનાર નો હોદ્દો:.....

1.	જિલ્લા નું નામ:	
2.	તાલુકા નું નામ:	
3.	જિલ્લા ઓફિસ થી વડોદરા નું અંતર (કી.મી.):	
4.	કુલ રેવન્યુ ગામોની સંખ્યા:	
5.	કુલ વસ્તી: 1. પુરુષ 2. સ્ત્રી	
6.	સ્ત્રી :પુરુષ દર:	
7.	કુલ એસસી વસ્તી:	
8.	કુલ એસટી વસ્તી:	
9.	કુલ સામાન્ય વસ્તી:	
10.	આરોગ્ય સુવિધા	1. સામુદાયિક આરોગ્ય કેન્દ્ર____ 2. પ્રાથમિક આરોગ્ય કેન્દ્ર _____ 3. પેટા કેન્દ્ર_____ 4. ખાનગી દવાખાનો_____ 5. સરકારી દવાખાનો _____ 6. સંસ્થા દ્વારા ચાલતું દવાખાનું ____ 7. અન્ય____
11.	કુલ આશા કાર્યકરો:	
12.	કુલ કેટલા એનજીઓ કામ કરે છે?	
13.	કુલ આંગણવાડી કેન્દ્ર ની સંખ્યા 1. કુલ આંગણવાડી કાર્યકર 2. કુલ આંગણવાડી હેલ્પર	

Appendix - 5

તાલુકા પ્રોફાઈલ

ડિપાર્ટમેંટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન
ફેકલ્ટિ ઓફ ફૅમિલી એન્ડ કમ્યૂનિટી સાયન્સીસ
ધ મહારાજા સયાજીરાવ યુનિવર્સિટિ ઓફ બરોડા

તારીખ: ..... માહિતી લેનાર નું નામ: .....

માહિતી આપનાર નું નામ: .....માહિતી આપનાર નો હોદ્દો:.....

1.	જિલ્લા નું નામ:	
2.	તાલુકા નું નામ:	
3.	જિલ્લા ઓફિસ થી અંતર (કી.મી.):	
4.	કુલ રેવન્યુ ગામોની સંખ્યા:	
5.	કુલ વસ્તી: 3. પુરુષ 4. સ્ત્રી	
6.	સ્ત્રી :પુરુષ દર:	
7.	કુલ એસસી વસ્તી:	
8.	કુલ એસટી વસ્તી:	
9.	કુલ સામાન્ય વસ્તી:	
10.	આરોગ્ય સુવિધા	8. સામુદાયિક આરોગ્ય કેન્દ્ર____ 9. પ્રાથમિક આરોગ્ય કેન્દ્ર _____ 10. પેટા કેન્દ્ર_____ 11. ખાનગી દવાખાનો_____ 12. સરકારી દવાખાનો _____ 13. સંસ્થા દ્વારા ચાલતું દવાખાનું ____ 14. અન્ય____
11.	કુલ આશા કાર્યકરો:	
12.	કુલ કેટલા એનજીઓ કામ કરે છે?	
13.	કુલ આંગણવાડી કેન્દ્ર ની સંખ્યા 3. કુલ આંગણવાડી કાર્યકર 4. કુલ આંગણવાડી હેલ્પર	

Appendix - 6

વિલેજ પ્રોફાઈલ

ડિપાર્ટમેંટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન
ફેકલ્ટિ ઓફ ફૅમિલી એન્ડ કમ્યૂનિટી સાઈનસિસ
ધ મહારાજા સયાજીરાવ યુનિવર્સિટિ ઓફ બરોડા

તારીખ:..... માહિતી લેનાર નું નામ: .....

માહિતી આપનાર નું નામ:..... માહિતી આપનાર નો હોદ્દો:.....

1.	જિલ્લા નું નામ:	
2.	તાલુકા નું નામ:	
3.	ગામ નું નામ:	
4.	જીલા ઓફિસ થી અંતર (કી.મી.):	
5.	કુલ ઘરો ની સંખ્યા:	
6.	કુલ વસ્તી: 1. પુરુષ 2. સ્ત્રી	
7.	સ્ત્રી:પુરુષ દર:	
8.	કુલ એસસી વસ્તી	
9.	કુલ એસટી વસ્તી	
10.	કુલ સામાન્ય વસ્તી	
11.	કઈ કઈ આરોગ્ય સુવિધા ઉપલબ્ધ છે	1. સામુદાયિક આરોગ્ય કેન્દ્ર 2. પ્રાથમિક આરોગ્ય કેન્દ્ર 3. પેટા કેન્દ્ર 4. ખાનગી દવાખાનો 5. સરકારી દવાખાનો 6. સંસ્થા દ્વારા ચાલતું દવાખાનું 7. અન્ય
12.	કુલ આશા કાર્યકરો:	
13.	કુલ કેટલા એનજીઓ કામ કરે છે:	
14.	કુલ આંગણવાડી કેન્દ્ર ની સંખ્યા 1. કુલ આંગણવાડી કાર્યકર 2. કુલ આંગણવાડી હેલ્પર	

Appendix - 7

આંગણવાડી પ્રોફાઇલ

ડિપાર્ટમેન્ટ ઓફ ફૂડ્સ એન્ડ ન્યૂટ્રિશન

ફેકલ્ટિ ઓફ ફૅમિલી એન્ડ કમ્યૂનિટી સાયન્સીસ

ધ મહારાજા સયાજીરાવ યુનિવર્સિટિ ઓફ બરોડા

તારીખ: _____	તપાસકર્તાનું નામ: _____
જવાબ આપનારનું નામ: _____	જવાબ આપનારનો હોદ્દો: _____

૧.	તાલુકો:	
૨.	આંગણવાડી કેન્દ્રનું નામ અને નંબર:	
૩.	જીલ્લા ઓફિસથી અંતર:	
૪.	આંગણવાડી વર્કર (AWW) નું નામ:	
૫.	શૈક્ષણિક લાયકાત:	૧. અભણ ૨. પ્રાથમિક ૩. માધ્યમિક ૪. ઉચ્ચતર માધ્યમિક ૫. સ્નાતક ૬. અનુસ્નાતક ૭. કોઇ પણ અન્ય (સ્પષ્ટ)
૬.	આંગણવાડી વર્કર (AWW) તરીકે કામગીરી કેટલા વર્ષથી કરી રહયા છો?	
૭.	કુલ બાળકોની સંખ્યા	ઉંમર (મહીનામાં) / સ્ત્રી / પુરૂષ / કુલ ૦-૬ ૬-૨૪ ૨૪-૫૯
૮.	કુલ સ્ત્રીઓની સંખ્યા:	કીશોરી / ગર્ભવતી / ધાત્રી / પ્રજનન વયની સ્ત્રીઓ
૯.	કુલ વસ્તી:	
૧૦.	કયા કયા દિવસો આંગણવાડી કેન્દ્ર પર ઉજવવામાં આવે છે?	૧. મમતા દિવસ ૨. સુપોષણ દિવસ ૩. અન્નપ્રાશન દિવસ ૪. બાળતુલા દિવસ ૫. અન્નવિતરણ દિવસ

Appendix - 8

આરોગ્ય સાથી, આંગણવાડી કાર્યકર અને આશા કાર્યકરો માટે

બાળકો ના પુરક આહાર વિષે માર્ગદર્શિકા

ટેકનીકલઈનપુટ:-ડો. હેમાંગીનીગાંધી

સંકલન કર્તા:-ભૂમિકાઠાકુર

ડિપાર્ટમેંટઓફફૂડસએન્ડન્યુટ્રીશન

ફેકલ્ટીઓફફેમીલીએન્ડકમ્યુનિટીસાયન્સીસ

ધમહારાજાસયાજીરાવયુનિવર્સીટીઓફબરોડા

વડોદરા, ગુજરાત

આતાપીસેવાફાઉન્ડેશન

ગજેરા, જંબુસર

રાષ્ટ્રીય પોષણ માસ

પોષણ ના

સુત્રો

પોષણના પાંચ સુત્રો

૧. બાળકના જીવનના પ્રથમ ૧૦૦૦ દિવસ :	સગર્ભાવસ્થાના ૨૭૦ દિવસથી બાળકનાં ૨ વર્ષની ઉંમર સુધીનો સમય ગાળો એટલે કે ૧૦૦૦ દિવસ દરમ્યાન પૂરતું પોષણ બાળકનાં સર્વાંગી વિકાસ માટે ખૂબ જ મદદરૂપ છે
૨. પૌષ્ટિક આહાર :	બાળકનાં ૬ મહિના પૂર્ણ થયા માતાના ધાવણ સાથે ઘરનો બનેલો મસળેલો અને ઘટ્ટ ઉપરી આહાર શરૂ કરો તેમજ ૬ માસથી ૩ વર્ષના બાળકને આંગણવાડીમાંથી આપવામાં આવતુબાલશક્તિ અવશ્ય આપો
૩. ઝાડા નિયંત્રણ :	બાળકને ૬ માસ સુધી ફક્ત સ્તનપાન કરાવો. અન્ય કઈ પણ ખાદ્ય પદાર્થ કે પાણી ન આપશો તે ઝાડાનું કરાણ બની શકે છે.
૪. એનેમિયા :	દરેક ઉંમરનાં લોકો અને ખાસ કરીને સગર્ભામાતા, ધાત્રીમાતાઓ તથા કિશોરીઓ એનેમિયાથી બચવા (IFA) ગોળી અને લીલા પાંદડાવાળા શાકભાજી ખાવા ખૂબ જ જરૂરી છે
૫. સ્વચ્છતા (WASH) :	જમતાં પહેલાં અને શૌચક્રિયા બાદ હાથ અવશ્ય ધોવા

"સહી પોષણ - દેશ રોશન"

ઋણ સ્વીકાર

બાળકોનાપુરક આહાર અંગેની માર્ગદર્શિકાફ્રન્ટલાઇન હેલ્થ વર્કર્સ જેવા કે આરોગ્ય સાથી, આંગણવાડી કાર્યકર અને આશા કાર્યકર તેમજ સ્વેચ્છિક સંગઠન ના કાર્યકરો માટે સમુદાય માં પરામર્શમાટે સરળતા રહે તે માટે બનાવવામાં આવી છે.

આ માર્ગદર્શિકા માં આપેલ માહિતી તેમજ ચિત્રો હાલમાં ઉપલબ્ધ યુનિસેફ તેમજ મહિલા અને બાળવિકાસ વિભાગ ની માહિતી પુસ્તિકાઓ માંથી પણ લીધેલ છે.

આ માર્ગદર્શિકા માટે આતાપી સેવા ફાઉન્ડેશન ગજેરા, જંબુસરદ્વારા આર્થીક સહયોગ સાંપડેલ છે જે માટે અમેતેમના આભારી છીએ.

ડો. હેમાંગીની ગાંધી

ભૂમિકા ઠાકુર

અનુક્રમણિકા

માર્ગદર્શિકા ની જરૂરીયાત

આ માર્ગદર્શિકા નો ઉપયોગ પુરક આહાર વિષે પરામર્શ કરવા માટેફ્રન્ટલાઇન કાર્યકરો ની ક્ષમતા માં વૃધ્દિ કરવા થશે.

આ માર્ગદર્શિકા નો ઉપયોગ કોણ કરી શકે?

ફ્રન્ટલાઇન કાર્યકરો

- આંગણવાડીકાર્યકરો
- આશાકાર્યકરો
- આરોગ્ય સાથી
- ANM- નર્સ બેન
- બાલ સેવિકા
- ગ્રામ સેવિકા
- સ્વેચ્છિકસંગઠનના કાર્યકરો
- અન્ય કોઇ પણ કોમ્યુનીટી કાર્યકરો

માર્ગદર્શિકા નો ઉપયોગ

- ફ્રન્ટલાઇન કાર્યકરો નો પુરક આહાર વિષેના જ્ઞાનમાં વૃધ્દિ કરવા.
- યોગ્ય પુરક આહાર વિષે બાળકો ની માતાઓનુ પરામર્શ કરવા.

૧.પ્રસ્તાવના

ઈન્ફંટ એન્ડ યંગ ચાઈલ્ડ ફીડીંગ (IYCF) દ્વારાબાળકને શ્રેષ્ઠત્તમ પોષણ આપવા તેમજ માતા તથા સંભાળકર્તા દ્વારા બે વર્ષ સુધીના બાળક ને સુયોગ્ય પુરક આહાર આપવાની ટેવો વિકસાવવા માટે સલાહ સુચન આપવામાં આવ્યા છે. ઈન્ફંટ એન્ડ યંગ ચાઈલ્ડ ફીડીંગ (IYCF) દ્વારા આપેલ સલાહ સુચનો:-

૧.સ્તનપાન ની વહેલી શરૂઆત, જન્મ પછી તરત જ પેહલા ૧ કલ્લાક ની અંદર.

૨. જન્મ પછી ૬ મહિનાની ઉંમર સુધી ફક્ત સ્તનપાન જ આપવું, ૧૮૦ દિવસ (સ્તનપાન સિવાય બાળક ને બીજું કઈ પણ આપવું નહિ; ORS, વિટામિન્સ, મિનરલ્સ કે દવાઓ ની સીરપ આપી શકાય.)

૩. યોગ્ય ઉંમરે પુરક આહાર ની શરૂઆત કરવી; ૬ મહિના પુરા કર્યા બાદ (બાળક ને અર્ધઘટ, પ્રવાહી કે પોચું ખાવા આપવું).

૪. બાળક ને ૨ વર્ષ ની ઉંમર સુધી સ્તનપાન આપવું ચાલુ રાખવું.

૫. ઉંમર પ્રમાણે યોગ્ય પુરક આહાર આપવો અને સ્તનપાન આપવું પણ ચાલુ રાખવું. બાળકને ઓછા મા ઓછા ૪ પ્રકાર ના ખોરાક આપવા (૧. અનાજઅને કંદમૂળ ૨. કઠોળ અને સુકો મેવો ૩. દૂધ અને દૂધ ની બનાવટો ૪. માંસ ૫. ઈંડા ૬. વિટામિન એ થી ભરપુર ફાળો અને શાકભાજી ૭. અન્ય ફાળો અને શાકભાજી)

૬. બીમારી દરમિયાન બાળક ના આહાર ની ખૂબ સંભાળ રાખવી.

૨.કુપોષણ

કુપોષણ એટલે શું?

કુપોષણ એટલે શરીરને જરૂરી એવા એક અથવા વધુ પોષકતત્વોની ઉણપ અને/અથવા તેમના શરીરમાં અપૂરતા શોષણની સ્થિતિ. મુખ્યત્વે પોષકતત્વોની ઉણપ સ્ત્રીઓ અને બાળકોના આરોગ્ય ઉપર ગંભીર અસર કરે છે.

પ્રકાર:-

૧. ઉંમર પ્રમાણે ઓછુ વજન (Underweight)

૨. સ્ટન્ટીંગ (Stunting)

૩. વેસ્ટીંગ (Wasting)

૪. સુક્ષ્મ પોષકતત્વોની ઉણપ

૫. અતિ કુપોષિત (Severely acute malnourished-SAM)

૬. મધ્યમ કુપોષિત(Moderately acute malnourished-MAM)

૭. ઉંમર પ્રમાણે વધુ વજન (Overweight)

કુપોષણ થવાના કારણો:-

- કુપોષણની અસરો માટે ફક્ત અસમતોલ ખોરાક જ જવાબદાર નથી પરંતુ બાળકોને સ્તનપાન કરાવવાની તથા આહારની અયોગ્ય પદ્ધતીયો, બાળ સંભાળની ગુણવત્તા, અંગત તેમજ પર્યાવરણીય સ્વચ્છતા અને સગર્ભા માટે સારી આરોગ્યપ્રદ સેવાઓની અસર પણ તેના પર પડે છે.
- ગુજરાતના લોકો મુખ્યત્વે શાકાહારી ખોરાક લે છે. શહેરી અને ગ્રામ્ય વિસ્તારમાં આજકાલ લોકો અને મુખ્યત્વે બાળકો બિસ્કિટ, નૂડલ્સ, વેફર્સ, ચોકલેટ, ઠંડા પીણાં, જંકફુડ વધારે ખાય છે.
- વધુમાં બાળકને કૃમિ હોવાથી, જમતા પહેલા હાથ ન ધોવાથી,ઘરમાં સ્વચ્છતા ન રાખવાથી બાળક જે કાંઈ પણ ખોરાક લે છે તેનું શરીરમાં શોષણ થતું નથી.

૩.પહેલાં સોનેરી ૧૦૦૦ દિવસ

પહેલાં૧૦૦૦દિવસોમાંઝડપથીબાળકોનોશારીરિકઅનેમાનસિકવિકાસથાયછે.
જેમાંસગર્ભાવસ્થાનાસમયગાળાથીલઈનેબાળકનાંજન્મનાબેવર્ષનીઉંમરસુધીનોસમયગાળોસામેલછે.
આદરમ્યાનતંદુરસ્તસ્વાસ્થ્ય, પુરતુંપોષણ,
પ્રેમાળઅનેતણાવમુક્તવાતાવરણતથાયોગ્યદેખરેખબાળકનેસંપૂર્ણવિકસિતકરવામાંમદદકરેછે.

૪. પુરક આહાર એટલે શું?

૬થી ૨૩ મહિના ના બાળકો ને સ્તનપાન સાથે ઘટ્ટ, અર્ધઘટ અને પોચો ખોરાક આપવામાં આવે એને પુરક આહાર કેહવાય.બાળક ૬ મહિના પુરા કરી લે તે પછી બાળકને સ્તનપાન સાથે સામાન્ય અને સ્થાનિક રીતે ઉપલબ્ધ ખોરાક આપવાનો શરુ કરવો.

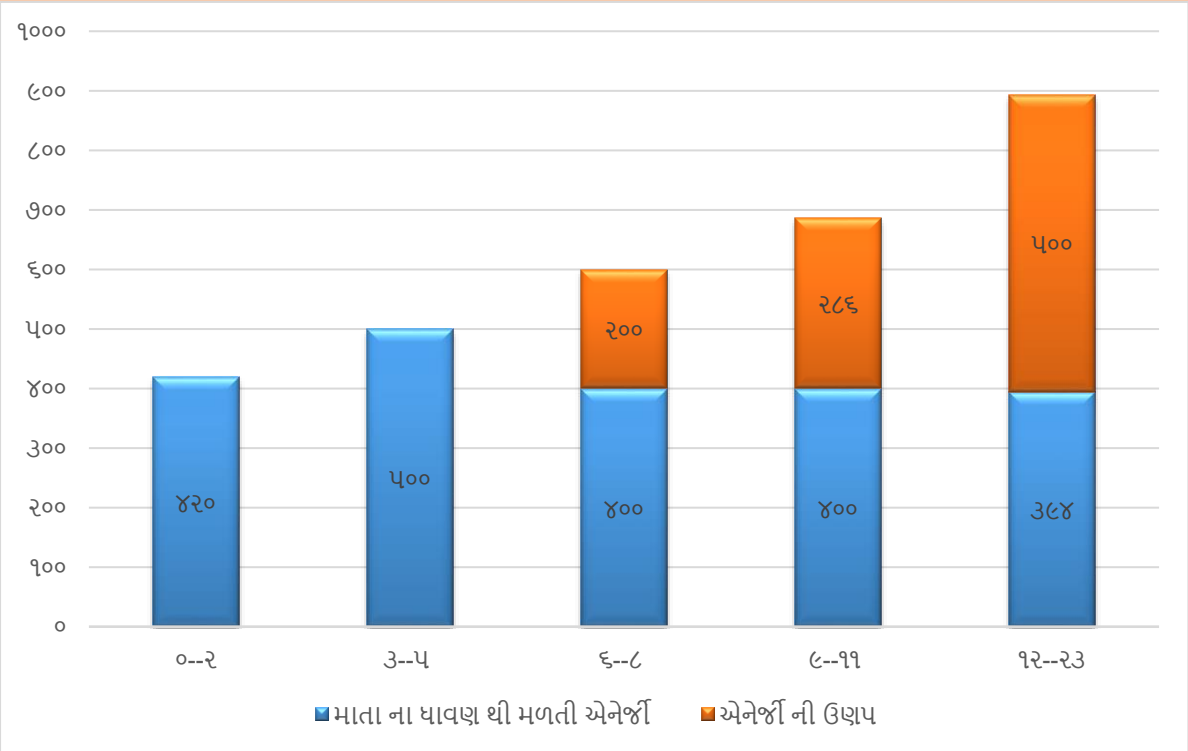
બાળકના ૬ મહિના પુરા થઈ જાય ત્યાર પછી તેને ફક્ત સ્તનપાન પૂરું ન પડી રહે બાળકનાં વિકાસ અનેવૃદ્ધિમાટે અન્ય ઉપરી ખોરાક આપવો જરૂરી છે. બાળક જેમ મોટું થાય તેમ તેની પ્રવૃતીયો પણ વધતી જાય અને તેની સાથે સાથે બાળકની પોષકતત્વો ની જરૂરત પણ વધતી જાય. તેથી, બાળક ૬ મહિનાની ઉંમર પૂરી કરે તે પછી બાળકને પુરક આહાર આપવો શરુ કરવો. જન્મ પછી ના પહેલા ૬ મહિના સુધી બાળક ને સ્તનપાન થી જ જરૂરી પોષકતત્વો મળી રહે પણ ૬ મહિના ની ઉંમર પછી બાળક ની પોષકતત્વો ની જરૂરીયાત વધી જાય છે જે પૂરી કરવા ઉપરી આહાર આપવો જરૂરી. બાળક ને પુરક આહાર શરુ કર્યા પછી પણ ૨ વર્ષ ની ઉંમર સુધી સ્તનપાન ચાલુ જ રાખવું કેમ ક ઘણા બધા પોષકતત્વો માતા ના ધાવણ થી પણ મળી રહે છે.

૫. પુરક આહાર નું મહત્વ

બાળક ૬ મહિનાનું થઈ જાય ત્યાર પછી ફક્ત સ્તનપાન બાળક ના વિકાસ માટે પુરતું ના પડી રહે. ૬ મહિનાની ઉંમર પછી બાળકને ઉપરી આહાર આપવો શરુ કરવો જરૂરી છે અને તેની સાથે સાથે ૨ વર્ષ સુધી સ્તનપાન આપવું પણ જરૂરી છે. પુરક આહાર યોગ્ય સમય પર શરુ ના થાય તો બાળક કુપોષિત થઈ શકે અને બાળક નું યોગ્ય ઉંમર પ્રમાણે વિકાસ પણ ન થાય.

પુરક આહાર માટે નીચે આપેલા મુદ્દાઓ ધ્યાન માં રાખવા:-

- બધા જ નાના બાળકો ને ૬ મહિના ની ઉંમર પછી ઉપરી આહાર ની જરૂરત પડે.
- બાળકો માં ૬-૧૧ મહિના નો સમય ખુબ જ જોખમી હોય કારણ કે આ સમયે બાળકો માં કુપોષણ સામાન્ય છે. બાળકો આ ઉંમર માં ઉપરી આહાર ખાતા શીખે છે અને પુરતો ખોરાક લેવા માટે સક્ષમ નથી હોતા.
- ૬ મહિના ની ઉંમર પછી બાળકો પ્રવાહી અને પોચો ખોરાક લેતાશીખે, બાળકો ના નવા દાત આવવા પણ શરુ થાય છે અને બાળકો ખોરાકનુ પાચન કરવા પણ સક્ષમ થાય છે.
- ૯ મહિનાની ઉંમર પછી બાળક અર્ધઘટ મસળેલો ખોરાક ખાવા માટે સક્ષમ થાય છે.
- ૧૫ મહિનાની ઉંમર પછી બાળક ઘર ના બીજા બધા સભ્યો ની જેમ કઠણ ખોરાક ખાવા શીખી જાય છે.



૬. પુરક આહાર શરુ કરવાની યોગ્ય ઉંમર

બાળકદમહિનાનીઉંમરપૂરીકરેએટલેબાળકનેપોચો/પ્રવાહી, અર્ધઘટ, કે પછી ઘટ્ટખોરાકનોપરિચયકરાવવો. બાળક ને યોગ્ય સમયે ઉપરી આહાર નો પરિચય કરાવવાનો ખુબ જ મહત્વ છે કારણ કે, ૬ મહિનાની ઉંમર પછી માતા નુ ધાવણ એકલું બાળક ના વિકાસ માટે પુરતું ના પડી શકે.

બાળકનેજન્મ થી ૬ મહિનાની ઉંમર સુધી ફક્ત માતા નુ ધાવણ જ આપવું ત્યારબાદ બાળક ની ૬ મહિના ની ઉંમર પૂરી કર્યા બાદ બાળકની વધતી પોષણ ની જરૂરીયાત પૂરી કરવા ઉપરી આહાર શરુ કરવું. બાળક ને પોચું અને પ્રવાહી ખોરાક જેમ ક મસળેલા કેળા, બાફેલીદાળ, દહીં, વગેરે આપવાનું શરુ કરવું. બાળક ને પહેલા અનાજ આપવું જ શરુ કરવું કારણ કે બાળક અનાજ સહેલી રીતે પચાઈ શકે.

પુરક આહાર અયોગ્ય સમયે શરુ કરવાના જોખમો

પુરક આહાર ની વહેલી શરૂઆત કરીહોય (૬ મહિનાની ઉંમર કરતાં ઓછું):

- ઝાડાકે પછી બીજી બીમારિયો થવાના જોખમો વધી જાય.
- માતા ના ધાવણ ની જગ્યા પર અન્ય ઓછા પોષણ યુક્ત ખોરાક નો પરિચય કરાવવા થી બાળક નુ વિકાસ અટકી જાય છે અને બાળક કુપોષિત થઈ જાય છે.

પુરક આહાર ની મોડી શરૂઆત કરી હોય:

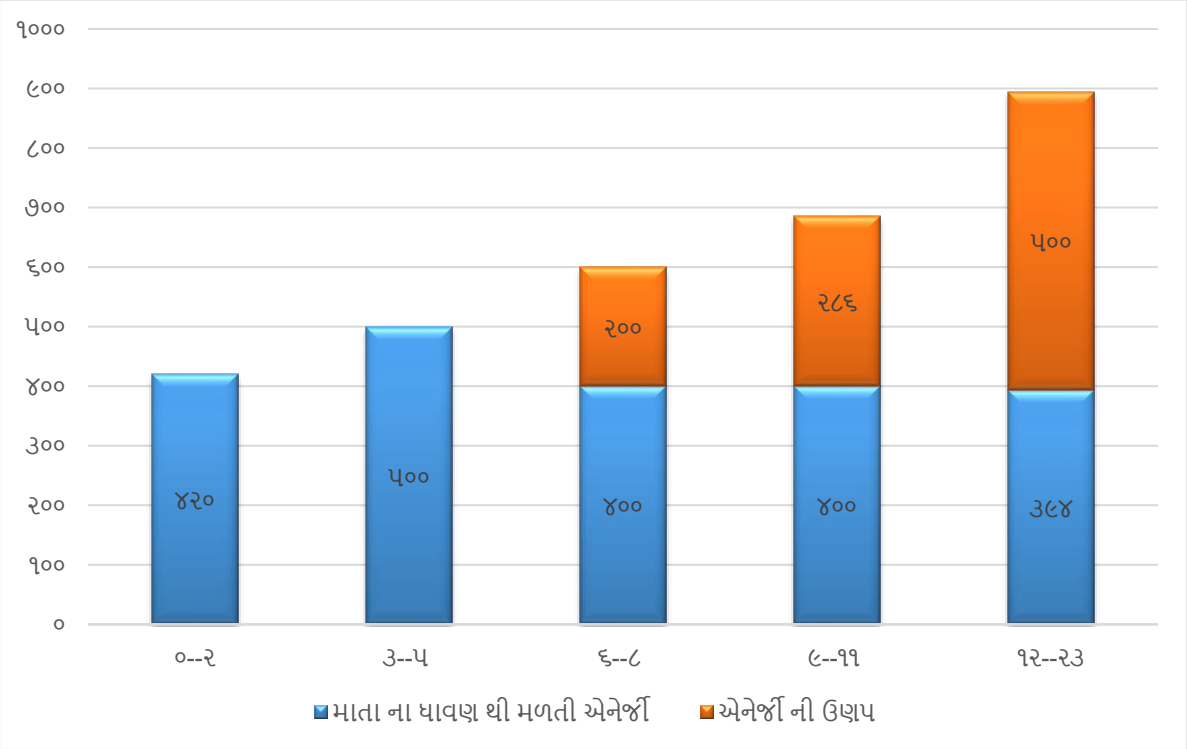
- જરૂરી પોષકતત્વો નથી મળતા.
- વિકાસ અને વૃદ્ધિ ધીમી થવીકે પછી અટકી જવી.
- કુપોષણનુ જોખમ વધે.
- બીમારિયો થવાનું જોખમ પણ વધે.

૭. બે વર્ષ સુધી સ્તનપાન સાથે પુરક આહાર

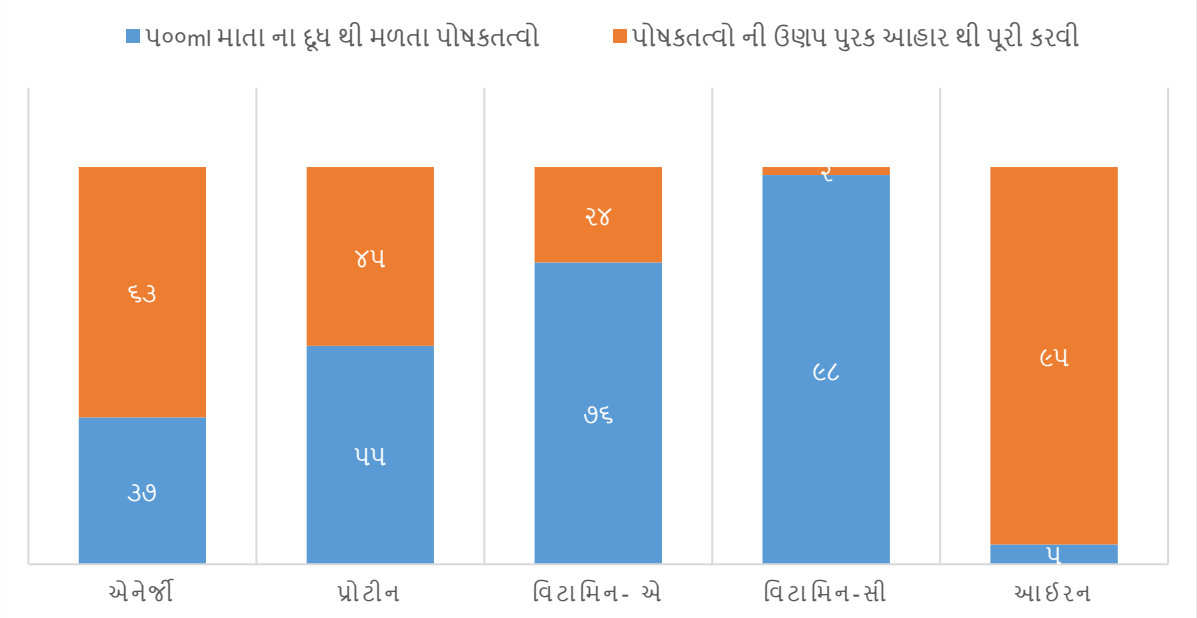
બાળકનેઉપરીઆહારસાથેસ્તનપાનઆપવુંપણચાલુરાખવું.
સ્તનપાનસાથેઉપરીઆહારઆપવાથીબાળકનેખુબજફાયદાથાય. શરૂઆતમાં૬ મહિનાની ઉંમર પછી જયારે બાળકનો ઉપરી આહાર સાથે પરિચય કરવો ત્યારે બાળક ને ભૂખ લાગે ત્યારે ત્યારે ઉપરી આહાર આપવો. બાળક ઉપરી આહાર ખાવાનુ શરુ કરે ત્યારે બાળકને પહેલા માતા નુ ધાવણ આપવું પછી ઉપરી આહાર આપવો.આથી યોગ્ય સ્તનપાન થઇ રહે. બાળક જયારે જયારે માંગે ત્યારે માતાયે બાળક ને ધાવણ આપવું. પુરક આહાર સાથે સ્તનપાન બે વર્ષ ની ઉંમર સુધી ચાલુ રાખવું.

બે વર્ષ સુધી સ્તનપાન આપવું કેમ ચાલુ રાખવું જોઈએ?

બાળકની ૬ મહિના થી ૧૨ મહિનાની ઉંમર સુધી માતાનુ ધાવણ અડધી પોષણ ની જરૂરત પૂરી પડે છે. અને ૧૨ મહિના થી ૨ વર્ષ સુધી ત્રીજા ભાગ ના પોષણ ની જરૂરત માતા ના ધાવણ થી જ પૂરી થઈ રહે છે.



બે વર્ષ સુધી સ્તનપાન ચાલુ રાખવાનો મહત્વ



૮. પુરક આહાર માં વિવિધતા

આપડે જાણીએ છીએ કે નાના બાળકો ની ખોરાક ખાવા ની ક્ષમતા ઓછી હોય છે, તેથી જે ઉપરી આહાર બાળકને આપવામાં આવે છે તેમાં ઓછા ખોરાક માં વધારે પોષકતત્વો ઉમેરી આપવા જેથી બાળક નો યોગ્ય વિકાસ થઈ શકે.તેલ,માખણ,ઘી, ખાંડ, ગોળ વગેરે નો ઉપયોગ:- યોગ્ય વિકાસ અને વજન વધારા માટે બાળકનાં ખોરાક માં ૧/૨-૧ tsp તેલ/ઘી, ખાંડ/ગોળ અને ૩-૪ tsp સિંગદાણા નો ભૂકો ઉમેરવો.

કઠોળ અને ફળો/શાકભાજી વગેરે નો ઉપયોગ:- મુખ્યખોરાક(ચોખા, ઘઉં, સુજી, રાગી, વગેરે) સાથેથોડાપ્રમાણ માં કઠોળ, લીલા શાકભાજી (પલક, મેથી, વગેરે) પીડા અને નારંગી ફાળો/શાકભાજી (કોરું, પપયું, ટમેટું, વગેરે) ઉમેરી ઉપરી આહારને વધુ પોષણ યુક્ત બનાવવું.

બાળકો ના ખોરાક માં ઉપલબ્ધ રાગી, બજરા, વગેરે ઉમેરવા થી મીનરલ્સ મળે છે.અનાજ અને કઠોળ ને ભેગા કરી બનાવવા જેમક ખીર, ખીચડી, વગેરે; જેથી ખોરાક માં પુરતું પ્રોટીન મળી રહે. આની સાથે સાથે માંસ, મચ્છી, ઈંડા, વગેરે થી પણ પ્રોટીન નું પ્રમાણ વધે છે.

ખોરાક માં વિવિધતા:- નાના બાળકો ના પોષણ ની જરૂરત પૂરી પાડવા માટે વિવિધ પ્રકાર ના ખોરાક આપવા. વિવિધ પ્રકાર ના ખોરાક જેમ કે(૧.) સ્તનપાન, (૨.) અનાજઅને કંદમૂળ, (૩.) કઠોળ અને સુકો મેવો, (૪.) દૂધ અને દૂધ ની બનાવટો, (૫.) માંસ, (૬.) ઈંડા, (૭.)વિટામિન-એ થી ભરપુર ફાળો અને શાકભાજી, (૮.) અન્ય ફાળો અને શાકભાજી. જે બાળકો ને વિવિધ પ્રકાર નો ખોરાક આપવામાં આવે છે તેમનામાં ભરપુર પ્રમાણ માં વિટામિન-એ, આયર્ન, કેલ્શ્યમ, થાઈઅમીન, ફોલેટ, ઝીંક, વિટામિન-બિ૬ અને બિ૧૨.

કયા પ્રકાર નો ખોરાક આપવો:-

બાળકો ને આપવા માં આવતો ખોરાક ૩ ભાગ માં વિભાજીત કરેલ છે:-

શક્તિમાટે:-અનાજ જેમ કે ઘઉં, ચોખા, બાજરી, જુવાર, મકાઈ, વગેરે; તથા બટાકા, ગોળ, ખાંડ, ઘી, તેલ.

વૃદ્ધિમાટે:- કઠોળ અને દાળ (મગ, તુવેર, અડદ, મઠ, ચણા, મસુર); દૂધકે ધુધ ની બનાવટો; ઈંડા, માંસાહાર વગેરે.

રોગપ્રતિકારક શક્તિ માટે:- લીલાં પાંદડાવાળા, શાકભાજી, ઘાટા પીડા રંગ ના ફાળો (પપયું, કેરી), તથાગાજર, આંબડા, સંતરા.

❖ ડબલ ફોર્ટીફાઈડ મીઠું (સત્વ)

સત્વડબલ ફોર્ટીફાઈડ મીઠું આઈ સી ડી અસ (ICDS) માંથી આપવામાં આવે છે. સત્વ માં આયોડીન અને આયર્ન બંને ફોર્ટીફાય કરવામાં આવ્યા છે. બાળક ના વિકાસ માંટે ખુબ જ જરૂરી છે. બાળક ના ખોરાક માં હંમેશાડબલ ફોર્ટીફાઈડ મીઠા નો જ ઉપયોગ કરવો.

ડબલ ફોર્ટીફાઈડ મીઠાના નિયમિત ઉપયોગથી થતા ફાયદા

- વ્યક્તિના શારીરિક તથા માનસિક વિકાસમાં સહાયરૂપ.
- શક્તિ અને બુદ્ધિવર્ધક.
- શરીરમાં લોહીની ઉણપ (આયર્નની ખામીથી થતા અનેમિયા) થી બચવામાં મદદરૂપ.
- આયોડીનની ઉણપથી થતા વિકાસલક્ષી વિલંબ અને ગલગંડ ના રોગથી બચાવ.
- આયોડીન સામાન્ય વૃદ્ધિ, થાઈરોઈડ અને મગજના વિકાસ માટે આવશ્યક છે.

૯. ઉંમર પ્રમાણે બાળક ને કેટલો ખોરાક આપવો

❖ ૬-૮ મહિનાના બાળકો

બાળક નો પહેલો ખોરાક પોચો અને પ્રવાહી હોવો જોઈએ જે બાળક સારી રીતે ગડી શકે, જેમકે'સુજીની ખીર, ખીચડી, મસળેલા શાકભાજી, અને કેળા, પપયું અને ચીકું જેવા ફાળો. બાળકને માટે તૈયાર કરેલો ખોરાક માતા ના દૂધ થી વધારે ઘટ્ટ હોવો જોઈએ, ખોરાક મસળીને પાતળો કરેલો હોવો જોઈએ જેથી બાળકને ગળવામાં સહેલું રહે.

સામાન્ય રીતે માતાઓ પાસે બાળકો નો ખોરાક તૈયાર કરવા માટે અલગ થી સમય હોતો નથી. તેથી ઘરે બનાવેલ સાદો ખોરાક જેમ ક દાળ, ભાત, શાકભાજી વગેરે ને મસાલા વગર મસળીને પાતળો કરી તેમાં ઘી કે તેલ ઉમેરી બાળક ને આપી શકાય.

બ્રેડકે રોટલી નો નાનો ભૂકો કરી તેને દૂધ સાથે મેળવી પણ બાળક ને આપી શકાય. દૂધ ની જગ્યા પર શાક નો રસો કે પછી ઘી/તેલ પણ નાખી ને આપી શકાય. બાળકને પહલા પ્રવાહી ખોરાક આપવો શરુ કરવો અને જેમ જેમ બાળક મોટું થતું જાય અર્ધઘટ અને કઠણ ખોરાક આપવો શરુ કરવો.

શરુ શરુ માં બાળક ખાવા માટે ના પણ પડી શકે અને ખોરાક બહાર પણ કાઢી શકે પણ બાળક ને ખોરાક આપવા માટે પ્રયત્નો ચાલુ રાખવા. શરૂઆત માં ૧ થી ૨ ચમચી ખોરાક આપવો શરુ કરવો.

૭-૮ મહિનાના બાળકો ને બાફી ને મસળેલા ઈંડા પણ આપી શકાય.જયારે બાળક બેસતા શીખે અને તેના નવા દાત આવવાના શરુ થાય ત્યારે બાળક ના હાથ માં જે આવે તે બાળક મો માં નાખી ખાવા લાગે તેથી આવા સમયે બાળક ને બ્રેડ, બિસ્કીટ, રોટલી નો ટુકડો વગેરે જેવી વસ્તુ આપવી અને બાળક જાતે ખોરાક ખાઈ શકે તેના માટે બાળકને પ્રોત્સાહિત કરવો.

યાદ રાખવું કેબાળક નાનું છે અને ઓછો ખોરાક જ લઈ શકે છે તેથી દિવસમાં ૨-૩ વાડકી જ બાળકને ખોરાક આપવો અને સાથે સાથે સ્તનપાન પણ ચાલુ રાખવું.

❖ ૯-૧૧ મહિનાના બાળકો

જેમ જેમ બાળક ની ઉંમર વધતી જાય તેમ તેમ બાળકને આપવામાં આવતો ખોરાક ની માત્ર પણ વધતી જાય છે. આઉંમરે બાળકને માંસાહારી ભોજન પણ મસળીને આપી શકાય. એટલી ઉંમર ના બાળકો ને દિવસ માં ૩-૪ વાડકીખોરાક આપવો અને ૧ વાર નાસ્તો આપવો અને એની સાથે સાથે સ્તનપાન પણ ચાલુ રાખવું.

❖ ૧૨-૨૩ મહિનાના બાળકો

આ ઉંમરે બાળક ને ઘરમાં બનતો બધા પ્રકાર નો ખોરાક આપવો અને બાળકને આપવામાં આવતા ખોરાક ની માત્ર વધારવી. આ ઉંમરે બાળકનેદિવસ માં ૪-૫ વાડકી ખોરાક આપવો અને ૨ વાર નાસ્તો આપવો અને સાથે સાથે સ્તનપાન પણ આપવું.

ભોજનની ઘટતા અનેઆપવાનો સમયગાળો

ઉંમર (મહિના)	બંધારણ	સમયગાળો	દરેક ભોજન ની સરેરાશ સંખ્યા
૬-૮	જાડી રાબ, બરાબર મસળેલા પદાર્થોથી શરૂઆત કરો.	અવારનવાર સ્તનપાન ઉપરાંત દિવસમાં ૨-૩ વખત ભોજન. ભૂખ લાગી હોય તે મુજબ ૧-૨ વખત નાસ્તો આપવો.	૨-૩ ચમચીથી શરૂઆત કરીને ૨૫૦ મિલી કપનો ૧/૨ ભાગ.
૯-૧૧	બરાબર સમારેલા, મસળેલા પદાર્થો અને એવા પદાર્થો જે બાળક પકડી શકે.	સ્તનપાન ઉપરાંત ૩-૪ વખત ભોજન. ભૂખ લાગી હોય તે મુજબ ૧-૨ વખત નાસ્તો આપવો.	૨૫૦ મિલીકપ/વાડકાનો ૧/૨ ભાગ.
૧૨-૨૩	ઘરે બનાવેલી વસ્તુઓ, જરૂર લાગે તો કાપવી અથવા મસળવી.	સ્તનપાન ઉપરાંત ૪-૫ વખત ભીજન. ભૂખ લાગી હોય તે મુજબ ૧-૨ વખત નાસ્તો આપવો.	૨૫૦મિલિ કપ/વાડકાનો ૩/૪ થી ૧ ભાગ.

૧૦.ઉંમર પ્રમાણે બાળકને કેવો ખોરાક આપવો

નાના બાળકો ને દિવસ માં ૫-૬ વખત ખોરાક આપવો જોઈએ સ્તનપાન સાથે. યાદ રાખવુ કે બાળક ને અપૂરતું ખોરાક આપવાથી બાળક કુપોષિત થઈ શકે છે. સંભાળકર્તા એ ધ્યાન રાખવુકે જેમ જેમ બાળક મોટું થાય તેના ખોરાક ની માત્ર વધારવી. ભોજન કેટલું પોષ્ટિક છે અને બાળક કેટલું ભોજન લે છે તેના પર થી બાળક ના ખોરાક ની સાચી માત્રા ખબર પડી શકે. નીચેWHO દ્વારા સુપોષિત બાળક માટે સલાહ સુચન આપેલા છે:-

- ૬-૮ મહિનાના બાળક ને દિવસમાં બે વખત પોચું અને પ્રવાહી ખોરાક સ્તનપાન સાથે આપવો.
- ૯-૧૧ મહિનાના બાળક નેદિવસમાં ૩ વખત અર્ધઘટ મસડેલો ખોરાક સ્તનપાન સાથે આપવો.
- ૧૨-૨૩ મહિનાના બાળક નેદિવસમાં ૪ વખત અર્ધઘટ કે પછી કઠણ ખોરાક સ્તનપાન સાથે આપવો. જે બાળકો ને સ્તનપાન નથી આપતા તેમને કઈ પણ પ્રવાહી ખોરાક દિવસમાં એક વાર આપવો.

૧૧. પુરક આહાર ની સ્વચ્છતા અને સંગ્રહ

પુરક આહાર આપતી વખતે સ્વચ્છતા જાળવવી ખુબ જ મહત્વની છે. પુરક આહાર સ્વચ્છતા થી ના બનાવવામાં આવ્યો હોય કે પછી સરખી રીતે તેનો સંગ્રહ ના કરવામાં આવ્યો હોય તો તેવો ખોરાક બાળકને આપવાથી બાળક બીમાર પડી શકે છે. પુરક ખોરાક ને સ્વચ્છતા થી તૈયાર કરવો, બરાબરરીતે સંગ્રહ કરવો, સાફ અને સ્વચ્છ હાથ થી બાળકને ખોરાક આપવો, વાડકી અને ચમચી પણ બરાબર સાફ કરવી. સંભાળકર્તા એ ધ્યાન રાખવુકે જયારે તે બાળક ને ભોજન આપે તે પેહલા બરાબર રીતે હાથ ધોઈ લે.

કાર્યકરો એ માતાઓ ને નીચે આપેલા મુદ્દાઓ પર અમલ કરવા પ્રોત્સાહિત કરવા:-

- ભોજન બનાવતા સમયે, બાળકને ભોજન આપતા પહેલા અને પછી બરાબર હાથ ધોવા.
- જે વાસણ ભોજન બનાવવામાં વપરાય અને બાળકને જે વાસણ માં ભોજન આપવામાં આવે છે તેને બરાબર સાફ કરવા અને સાફ જગ્યા પર તેને મુકવા.
- ખોરાક બરાબર તાપમાન રાખી બનાવવો જેથી તેમાં બધા જંતુ મારી જાય.
- તરત બનેલું તાજું ભોજન બાળકને આપવું. અને બાળક ને આપવા માટે બનાવેલ ભોજન ૨ કલ્લાક થી વધારે બહારના તાપમાન માં મૂકી નહિ રાખવું.
- બધા અનાજ નો બરાબર બરણીઓ માં સંગ્રહ કરવો.
- ઘર ની અંદર અને અજુ બાજુ નુ વાતાવરણ સાફ અને સ્વચ્છ રાખવું.
- બાળક મળ/મુત્ર કરી આવે ત્યારબાદ માતાએ બાળકને બરાબર સાફ કરવો.
- બાળકનું મળ/મુત્ર સાફ કર્યા બાદ માતાએ પણ બરાબર રીતે હાથ ધોવા.

શું તમે તમારા બાળકને કીટાણું તો નથી ખવડાવતા ને?

રસોઇ બનાવતા પહેલા, પીરસતા કે જમાડતા પહેલા તથા
જાજરૂ ગયા પછી હાથ સાબુથી ધોવા આવશ્યક છે.

નિર્મલ ગ્રામ વિકાસ યોજનાની

સંપૂર્ણ સ્વચ્છતા અભિયાન

unicef

૧૨. સક્રિયરીતેખોરાક અંગેફીડબેક

આ પ્રતિસાદ માં બાળક ને ખોરાક આપવાની, ખોરાક ખાવા માટે પ્રોત્સાહિત કરવાની અને બાળક ને શું જોઈએ છે તે સમજવાની પ્રક્રિયા નો ઉમેરો થાય છે. કાર્યકર્તા એ નીચે આપેલા મુદ્દાઓ વિષે માતાઓ ને સમજાણ આપવી:-

- બાળકો ને ખોરાક ખુબ જ ધ્યાન અને સંભાળ થી આપવો. બાળક રમવા માં લાગી જાય તો ખોરાક ના ખાય પણ ત્યારે માતાયે ધ્યાન રાખી થોડા થોડા સમયે બાળકને ખોરાક આપતું રહેવું.
- બાળક ક્યારે ભૂખ્યું થાય છે તેની સમજાણ માતા ને હોવી જોઈએ અને જયારે પણ બાળક ભૂખ્યું થાય ત્યારે તરત જ તેને ખોરાક આપવો.
- જો બાળક કોઈ પ્રકાર ના ખોરાક ને ના ખાય તો તે પ્રકાર ના ખોરાક ને જુદી જુદી રીતે બાળકના ભાવતા ખોરાક સાથે મેળવી ને આપવું.
- બાળક સાથે વાતો કર્તા, બાળકને ખોરાક ખાવા પ્રોત્સાહિત કર્તા બાળકને ખોરાક આપવો.
- બાળક ને ભોજન આપતા સમયે બાળક સિવાય બીજી કોઈ જગ્યા પર ધ્યાન આપવું નહિ આવું કરવા થી બાળક અડધુ ખાવા છોડી ને જઈ શકે છે.
- બાળકને ખોરાક આપવા માટે સ્વચ્છ અને સાફ વાડકી કે થાળી નો ઉપયોગ કરવો.
- બાળકને જબરદસ્તી ખોરાક આપવો નહિ.
- બાળક જયારે સુતું હોય ત્યારે બાળક ને ખોરાક નહિ આપવો આવું કરવા થી ખોરાક બાળક ના ગાળા માં અટકાઈ શકે છે.
- બાળક બીમાર હોય ત્યારે માતાયે ખુબ સંભાળ રાખવી સ્તનપાન ચાલુ રાખવું અને નજીકના ડોક્ટર ની સલાહ લેવી.
- બાળક ને બધા પ્રકાર ના ખોરાક ખાવા માટે પ્રોત્સાહિત કરવું. સંભાળકર્તા એ ધ્યાન રાખવું કે તે કોઈ પણ પ્રકાર ના ખોરાક ના ભાવતું હોય તેવું ના બતાવે.

૧૩. બીમારી દરમિયાન અને પછી બાળકની સંભાળ

પુરક પોષણ ના સમયે એટલે કે ૬ મહિના થી ૨ વર્ષ સુધી માં નાના બાળકો વારંવાર બીમાર પડી શકે છે ઝાડા, મીસ્લ્સ, શરદી કે ખાસી વગેરે જેવી બીમારીઓ બાળક ને લાગી શકે. આવી બીમારી દરમિયાન બાળકની ખુબ સંભાળ રાખવી જરૂરી છે. બીમારી દરમિયાન પણ બાળક ને પુરતું ખોરાક મળી રહે તેની સંભાળ રાખવી જરૂરી કેમ કે બીમારી દરમિયાન બાળક વધારે નબળું હોય ત્યારે તેને પુરતું પોષણ ના મળે તો બાળક કુપોષિત થઈ જાય. કુપોષણ ની સાઈકલ અટકાવવા બાળક ને બરાબર રીતેબીમારી દરમિયાન ખોરાક અને પોષણ આપવું. બાળકો ને બીમારી દરમિયાન વધુ માં વધુસ્તનપાન આપવું અને સાથે સાથે ઉપરી ખોરાક પણ આપવો.

બીમારી દરમિયાન નવજાત શિશુઓ અને બાળકોનો ખોરાક ઓછો થાય છે, જો કે તેમનીશક્તિની જરૂરિયાતમાં વધારો થાય છે. વજનમાંઘટાડો થતા અટકાવવા અને પોષણમાંઉણપન આવે તે માટે બીમારીદરમિયાનઅને ત્યાર પછી બરાબર ખોરાક આપવો જરૂરી છે.

એટલું કરો :-

- બાળકને બીમારી દરમિયાન વારંવાર સ્તનપાન કરાવવું જોઈએ.
- છ મહિનાથી મોટા બાળકોને, બીમારી દરમિયાન સ્તનપાન અને પુરક આહાર બંને આપવાનું ચાલુ રાખવું જોઈએ.
- ખોરાક પાતળો કર્તા કે બંધ કર્તા રોકવો જોઈએ.
- બીમાર બાળકને પુરતું ભોજન ખવડાવવામાં મદદ કરવા માટે પુરતો સમય ફાળવવો જોઈએ અને ધ્યાન આપવું જોઈએ.
- નાના બાળકને થોડા થોડા પ્રમાણમાં આહાર લેવા માટે પ્રોત્સાહન આપવું જોઈએ પણ વારંવાર અને બાળકને ગમતો આહાર જ આપવો જોઈએ.
- ઓરી, ઝાડા અને શ્વાસની તકલીફવાળા બાળકો વિટામિન એ થી ભરપુર ખોરાક લે તેમ સુનિશ્ચિત કરો.ઝાડા થયા હોય તેવા બાળકો ને થોડા થોડા પ્રમાણ માં ઓ. આર. એસ. આપવું જોઈએ.
- બીમારી પછી જયારે બાળક સાજુ થઈ રહ્યું હોય ત્યારે પુરતો તાકાતવાળો પોષણયુક્ત આહાર, પ્રોટીન, અને અન્ય પોષક તત્વો બાળક ના વિકાસ ને જાળવી રાખવા અને પોષક તત્વોના ભંડારને ફરી ભરવા માટે જરૂરી છે.
- બીમારી પછી એક કે બે ભોજન વધારીને, પોષણવાળો નાસ્તો આપીને, એક મહિના સુધી દૈનિક ભોજનમાં દરેક વખતે વધારે ભોજન આપીને બાળકમાં પોષણનું પ્રમાણ સહેલાઈથી વધારી શકાય છે.

૧૪. બાલશક્તિ– પૌષ્ટિક ટેક હોમ રેશન

બાલશક્તિપૌષ્ટિક ટેક હોમ રાશન નુ આઈ. સી. ડી. એસ. (ICDS) ના અંતર્ગત વિનામૂલ્યે વિતરણ કરવામાં આવે છે.બાલશક્તિમાં ઘઉં નો લોટ, ખાંડ, ખાધ વનસ્પતિ તેલ, સોયાબીન નો લોટ, ચણાનો લોટ, ઉમરેલાં વિટામિન્સ અને ખનીજ તેલ જેવા ખાધપદાર્થો ઉમરેલ છે.

૧૫.બાળકો માટે વાનગીઓ

૬-૮ મહિના ના બાળકો માટે

૧. સાદી રાબ

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૧૫ ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (૮૦મિલિ) (C-૨)	એનર્જી- ૬૬ કિલોકેલરી પ્રોટીન- ૧.૫૭ ગ્રામ આયર્ન- ૦.૭૮ મીલીગ્રામ કેલ્શિયમ- ૩૬ મીલીગ્રામ

બનાવવાની રીત:-

- બાલશક્તિ ને ૧ મિનીટ સુધી શેકવો.
- તેમાં ૧ કપ પાણી ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું.

૨. દૂધ ની રાબ

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૧૫ ગ્રામ દૂધ- ૩૦ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૮૦મિલિ) (C-૨)	એનર્જી- ૯૮.૧૯ કિલોકેલરી પ્રોટીન- ૨.૬૭ ગ્રામ આયર્ન- ૦.૮૨ મીલીગ્રામ કેલ્શિયમ- ૭૨.૩ મીલીગ્રામ

બનાવવાનીરીત:-

- બાલશક્તિ ને ૧ મિનીટ સુધી શેકવો.
- તેમાં ૧ કપદૂધ(૩૦ મિલી) ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું

૩ .મમરાની રાબ

સામગ્રી	પ્રમાણ	પોષકતત્વો
મમરાનો ભુકો પાવડર(- ૧૦ ગ્રામ ખાંડ દડેલી, - ૧૦ગ્રામ દુધ, - ૧૦૦ મી.લી કોપરેલ - ૫ ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (૮૦મિલિ) (C-૨)	એનર્જી-૪૯.૫૯કિલોકેલરી પ્રોટીન-૧.૧ગ્રામ આયર્ન-૦.૪૬૬મીલીગ્રામ કેલ્શિયમ-૨.૭૧મીલીગ્રામ

બનાવવાની રીત –

૧. કડાઈમાં મમરાના પાવડર ને આછા તાપે શેકી લો
૨. ખાંડ અને દુધ નાખી ડી વાર હાલાવો.
૩. રાબ થઈ જાય એટલે ૫ ગ્રામ કોપરેલ નાખી બરાબર હલાવો

નોધ -શેકેલા સીંગદાણાનો ભુકો નાખી શકાય.

૯-૧૧ મહિના ના બાળકો માટે

૧. સાદો શીરો

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૧૫ ગ્રામ તેલ- ૫ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૧૦૦મિલિ) (C-૩)	એનર્જી- ૧૧૧ કિલોકેલરી પ્રોટીન- ૧.૫૭ ગ્રામ આયર્ન- ૦.૭૮ મીલીગ્રામ કેલ્શિયમ- ૩૬ મીલીગ્રામ

બનાવવાની રીત :-

- કડાઈ માં ૫ મિલી તેલ ગરમ કરવું અને તેમાં બાલશક્તિ ને મિનીટ સુધીશેકવું.
- તેમાં ૧ કપપાણી ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું

૨. દૂધ નો શીરો

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૧૫ ગ્રામ તેલ- ૫ મિલી દૂધ – ૩૦ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૧૦૦મિલિ) (C-૩)	એનર્જી- ૧૪૩.૧૯ કિલોકેલરી પ્રોટીન- ૨.૬૭ ગ્રામ આયર્ન- ૦.૮૨ મીલીગ્રામ કેલ્શિયમ- ૭૨.૩ મીલીગ્રામ

બનાવવાની રીત :-

- કડાઈ માં ૫ મિલી તેલ ગરમ કરવું અને તેમાં બાલશક્તિ ને મિનીટ સુધીશેકવું.
- તેમાં ૧ કપદૂધ ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું

૩. રાઈસ પોરીજ વિથ બનાના

સામગ્રી	પ્રમાણ	પોષકતત્વો
ચોખા નો લોટ- ૮૦ ગ્રામ દૂધ – ૨૦૦ મિલી ખાંડ- ૧૫ ગ્રામ કેળા- ૮૦ ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (૧૦૦મિલિ) (C-૩)	એનર્જી- ૧૩૭ કિલોકેલરી પ્રોટીન- ૩.૪ ગ્રામ આયર્ન- ૦.૫ મીલીગ્રામ કેલ્શિયમ- ૮૦ મીલીગ્રામ

બનાવવાની રીત:-

- દૂધ અને ખાંડ ને ચોખા ના લોટ સાથે મેળવો.
- ધીમા તાપે અને ગરમ કરવા મુકો અને હલાવતા રહો.
- અર્ધઘટથાય એટલે ઉતારી લો અને ઠંડુ થવા દો.
- કેળા ને મસળીને મિશ્રણ સાથે મિક્સ કરી લો.

૪. પાલક ખીચડી

સામગ્રી	પ્રમાણ	પોષકતત્વો
ચોખા - ૫૦ ગ્રામ મગ ની દાડ(શેકેલી) – ૨૫ગ્રામ પાલક- ૫૦ ગ્રામ ઘી – ૧૦ ગ્રામ પાણી- ૨૦૦ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૨૦૦મિલિ) (C-૪)	એનર્જી- ૧૨૯ કિલોકેલરી પ્રોટીન- ૩.૭ ગ્રામ આયર્ન- ૦.૭મીલીગ્રામ કેલ્શિયમ- ૨૧ મીલીગ્રામ

બનાવવાની રીત:-

- ચોખા અને દાડ ૧ કલ્લાક પાણી માં પલાળી રાખવા અને પછી બાફી લેવા.
- પાલક ને ધોઈ કાપી મસળી કાઢવા અને ગરમ કરવા
- ગરમ પલક ના સૂપ ને બાફેલા ચોખા અને મગ સાથે મિક્સ કરવા.
- મીઠું સ્વાદ અનુસાર નાખી મિક્સ કરવું.
- અને સેર્વ કરવું.

૫.કેળા અને સિંગદાણા નો હલવો

સામગ્રી	પ્રમાણ	પોષકતત્વો
સીંગદાણા - ૧૦ ગ્રામ કેળા– ૩૦ગ્રામ ગોળ- ૩૦ ગ્રામ દૂધ- ૩૦મિલી	કુલ પ્રમાણ – ૧ વાડકી (૨૦૦મિલિ) (C-૪)	એનર્જી- ૨૨૭ કિલોકેલરી પ્રોટીન- ૪ ગ્રામ આયર્ન- ૧.૨૬ મીલીગ્રામ કેલ્શિયમ- ૭૩ મીલીગ્રામ

બનાવવાની રીત:-

- કેળા ને મસળી નાખો.
- સિંગદાણા સેકી તેનો ભૂકો કરી નાખવો.
- ગોળ, દૂધ અને સિંગદાણા નો ભૂકો મસળેલા કેળા માં મિક્સ કરવો.

૧૨-૨૩ મહિના ના બાળકો માટે

૧. સાદોહલવો

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ તેલ- ૫ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૧૦૦મિલિ) (C-૩)	એનર્જી- ૧૭૭ કિલોકેલરી પ્રોટીન- ૩.૧૪ ગ્રામ આયર્ન- ૧.૫૬ મીલીગ્રામ કેલ્શિયમ- ૭૨ મીલીગ્રામ

બનાવવાની રીત :-

- કડાઈ માં ૫ મિલી તેલ ગરમ કરવું અને તેમાં બાલશક્તિ ને મિનીટ સુધીશેકવું.
- તેમાં ૧ કપપાણી ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું

૨. દૂધ નો હલવો

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ તેલ- ૫ મિલી દૂધ – ૫૦ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૧૦૦મિલિ) (C-૩)	એનર્જી- ૨૩૦.૬ કિલોકેલરી પ્રોટીન- ૪.૯૮ ગ્રામ આયર્ન- ૧.૬૪ મીલીગ્રામ કેલ્શિયમ- ૧૩૨.૫ મીલીગ્રામ

બનાવવાની રીત :-

- કડાઈ માં ૫ મિલી તેલ ગરમ કરવું અને તેમાં બાલશક્તિ ને મિનીટ સુધીશેકવું.
- તેમાં ૧ કપદૂધ ઉમેરવું.
- સારી રીતે મિક્સ કરવું
- ૫ મિનીટ ગરમ થવા દિયા પછી ઉતારી લેવું

૩. થેપલા

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ તેલ- ૧૦મિલી ઘઉં નો લોટ- ૧૫ ગ્રામ મસાલા- સ્વાદ મુજબ	કુલ પ્રમાણ – ૨ નંગ	એનર્જી- ૨૭૦ કિલોકેલરી પ્રોટીન- ૪.૩૧ ગ્રામ આયર્ન- ૨.૧૭ મીલીગ્રામ કેલ્શિયમ-૭૬.૬ મીલીગ્રામ

બનાવવાની રીત :-

- ૩૦ ગ્રામ બાલશક્તિ લેવો.
- તેમાં ૧૫ ગ્રામ ઘઉં નો લોટ ઉમેરી સ્વાદ અનુસાર મસાલા ઉમેરી લેવા.
- બધુ સારી રીતે મિક્સ કરી તેનો લોટ બાંધી લેવો.
- તે લોટ માં થી નાના થેપલાં થાપી તવા પર તેલ સાથે શેકી લેવા.

૪. મેથી ના થેપલા

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ મેથી- ૩૦ ગ્રામ તેલ- ૧૦ મિલી ઘઉં નો લોટ- ૧૫ ગ્રામ મસાલા- સ્વાદ મુજબ	કુલ પ્રમાણ – ૨ નંગ	એનર્જી- ૨૮૦ કિલોકેલરી પ્રોટીન- ૫.૮૧ ગ્રામ આયર્ન- ૩.૮૭ મીલીગ્રામ કેલ્શિયમ-૧૫૮.૮ મીલીગ્રામ

બનાવવાની રીત :-

- ૩૦ ગ્રામ બાલશક્તિ લેવો.
- મેથી ને બરાબર સાફ કરી ધોઈ તેને પાતળી પીસી નાખવી.
- તેમાં ૧૫ ગ્રામ ઘઉં નો લોટ, પીસેલી મેથી ઉમેરી સ્વાદ અનુસાર મસાલા ઉમેરી લેવા.
- બધુ સારી રીતે મિક્સ કરી તેનો લોટ બાંધી લેવો.
- તે લોટ માં થી નાના થેપલાં થાપી તવા પર તેલ સાથે શેકી લેવા.

(નોંધ:- મેથી સિવાય બીજા કોઈ પણ લીલા શાકભાજી નો ઉપયોગ કરી શકાય.)

૫. સુખડી

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ તેલ- ૫ મિલી ઘઉં નો લોટ- ૧૫ ગ્રામ ગોળ- ૫ ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (C-૧)	એનર્જી- ૨૪૨.૬ કિલોકેલરી પ્રોટીન- ૪.૮૦ ગ્રામ આયર્ન- ૨.૪૦ મીલીગ્રામ કેલ્શિયમ-૮૧.૯૫ મીલીગ્રામ

બનાવવાની રીત :-

- ૩૦ ગ્રામ બાલશક્તિ લેવોઅને તેને ઘઉં ના લોટ સાથે બરાબર મિક્સ કરી લેવો.
- કઢાઈ માં તેલ ગરમ કરવું અને તેમાં બલશક્તિ અને ઘઉં ના લોટ ના મિશ્રણ ને શેકી લેવા.
- ત્યારબાદ એક કઢાઈ માં ગોળ ગરમ કરી લેવો.
- શેકેલા બલશક્તિ અને ઘઉં ના લોટ ના મિશ્રણ ને ગરમ ગોળ સાથે મિક્સ કરવો.
- બાર બાર મિક્સ કરી મિશ્રણ ને એક થાળી માં નીકાળી ઠંડુ કરવું.
- ઠંડુ પડ્યા બાદ તેના નાના નાના કટકા કરી લેવા.

૬. લાડુ

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૩૦ ગ્રામ તેલ- તડવા માટે ઘઉં નો લોટ- ૧૫ ગ્રામ ગોળ- ૫ ગ્રામ	કુલ પ્રમાણ – ૪ નંગ	એનર્જી- ૧૯૭.૬ કિલોકેલરી પ્રોટીન-૪.૮૦ ગ્રામ આયર્ન- ૨.૪૦ મીલીગ્રામ કેલ્શિયમ-૮૧.૯૫ મીલીગ્રામ

બનાવવાની રીત :-

- ૩૦ ગ્રામ બાલશક્તિ લેવોઅને તેને ઘઉં ના લોટ સાથે બરાબર મિક્સ કરી લેવો.
- બાલશક્તિ લેવોઅને તેને ઘઉં ના લોટ ના મિશ્રણ માં પાણી ઉમેરી તેના નાના નાના મુઠીયા બનાવી લેવા.
- કઢાઈ માં તેલ ગરમ કરી મુઠીયા તળી લેવા.
- ત્યારબાદ મુઠીયા ઠંડા પડે એટલે તેનો ભૂકો કરી લેવો.
- એક કઢાઈ માં ગોળ ગરમ કરવો અને તેને મુઠીયા ના ભૂકા માં ઉમેરી લેવો.
- ગોળ ઠંડો પડે તે પહેલા નાના નાના લાડુ બનાવી લેવા.

૭. શક્કરપારા

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૨૦ ગ્રામ તેલ- તડવા માટે ઘઉં નો લોટ- ૧૦ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (C-૧)	એનર્જી- ૧૨૦.૦૨ કિલોકેલરી પ્રોટીન-૩.૧૪ ગ્રામ આયર્ન- ૧.૪૫ મીલીગ્રામ કેલ્શિયમ-૫૧.૦૯ મીલીગ્રામ

બનાવવાની રીત :-

- ૨૦ ગ્રામ બાલશક્તિ લેવોઅને તેને ઘઉં ના લોટ સાથે બરાબર મિક્સ કરી લેવો.
- બાલશક્તિ અને ઘઉં ના લોટ ના મિશ્રણ માં પાણી ઉમેરી તેનો લોટ બાંધી લેવો.
- એક મોટી રોટલી વણી લેવી અને તેના નાના નાના શક્કરપારાકાપી લેવા.
- શક્કરપારા ને ગરમ તેલમાં અચ્છા લાલ થાય ત્યાં સુધી તળી લેવા.

૮. પૂરી

સામગ્રી	પ્રમાણ	પોષકતત્વો
બાલશક્તિ- ૨૦ ગ્રામ તેલ- તડવા માટે ઘઉં નો લોટ- ૧૦ ગ્રામ	કુલ પ્રમાણ – ૬ નંગ	એનર્જી- ૧૨૦.૦૨ કિલોકેલરી પ્રોટીન- ૩.૧૪ ગ્રામ આયર્ન- ૧.૪૫ મીલીગ્રામ કેલ્શિયમ-૫૧.૦૯ મીલીગ્રામ

બનાવવાની રીત :-

- ૨૦ ગ્રામ બાલશક્તિ લેવોઅને તેને ઘઉં ના લોટ સાથેબરાબરમિક્સ કરી લેવો.
- બાલશક્તિ અને ઘઉં ના લોટ ના મિશ્રણ માં પાણી ઉમેરી તેનો લોટ બાંધી લેવો.
- તે લોટ માં થી નાની નાની પૂરી વણી લેવી.
- પુરીઓને ગરમ તેલમાં અચ્છા લાલ થાય ત્યાં સુધી તળી લેવી.

૯. ફાળા લાપસી

સામગ્રી	પ્રમાણ	પોષકતત્વો
ઘઉં ના ફાળા – ૧૦૦ ગ્રામ ગોળ - ૧૦૦ ગ્રામ ઘી – ૨૦ ગ્રામ સિંગદાણા– ૧૦ ગ્રામ ખોપરા નો ભૂકો – ૨૦ ગ્રામ પાણી – ૩૦૦ મિલી	કુલ પ્રમાણ – ૧ વાડકી (૨૦૦મિલી) (C-૧)	એનર્જી- ૨૨૦કિલોકેલરી પ્રોટીન- ૩.૨૪ ગ્રામ આયર્ન- ૧.૯ મીલીગ્રામ કેલ્શિયમ-૪૧.૭ મીલીગ્રામ

બનાવવાની રીત :-

- ઘઉં ના ફાળા ને કઢાઈ માં શેકી લેવા.
- સિંગદાણા શેકી તેને સાફ કરી લેવા.
- શેકેલા ઘઉં ના ફાળા માં ગોળ, ખોપરા નો ભૂકો અને પાણી નાખી ગરમ કરવું અને થોડી વાર બનવા દેવું.
- છેલ્લે શેકેલા સિંગદાણા નો ભૂકો કરી ઉપર નાખવો.

૧૦. પોષ્ટીક પંજરી

સામગ્રી	પ્રમાણ	પોષકતત્વો
ઘઉં નો લોટ- ૧૦૦ ગ્રામ બેસન – ૫૦ ગ્રામ ઘી- ૨૦ ગ્રામ ગોળ – ૫૦ ગ્રામ	કુલ પ્રમાણ – ૧ વાડકી (C-૨)	એનર્જી- ૩૭૩ કિલોકેલરી પ્રોટીન-૧૦.૪ ગ્રામ આયર્ન- ૨.૯ મીલીગ્રામ કેલ્શિયમ-૩૫ મીલીગ્રામ

બનાવવાની રીત :-

- કઢાઈ માં ઘી ગરમ કરવું તેમાં ઘઉં નો લોટ અને બેસન શેકી લેવુ.
- તેમાં ગોળ ને સારી રીતે છીણી બરાબર મિક્સ કરી લેવું.

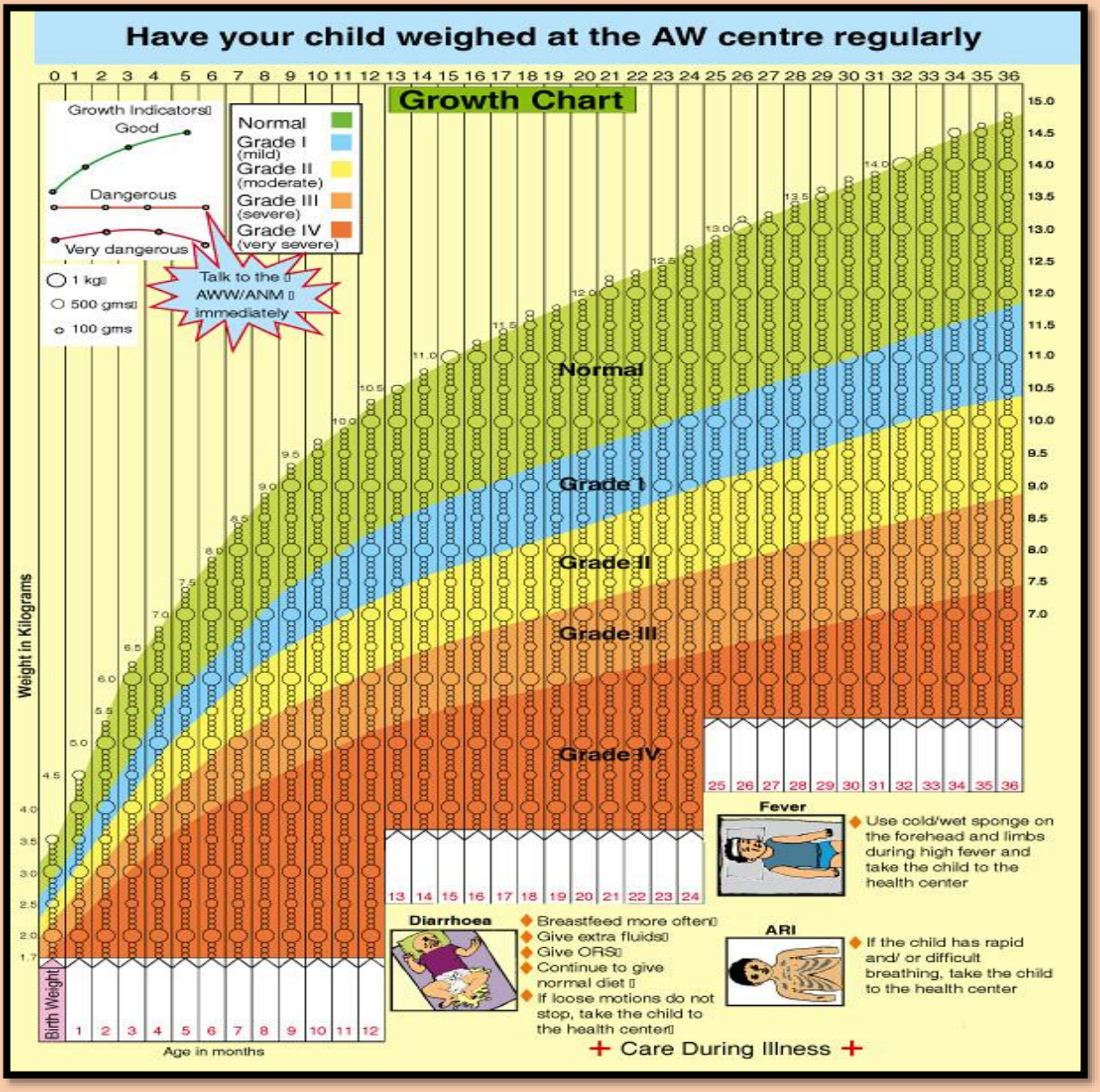
૧૬.સ્ટાન્ડર્ડ કપસ અને સ્પૂન

C-૧ , ૨૦૦મિલી | C-૨, ૧૦૦મિલી | C-૩, ૮૦મિલિ | C-૪, ૫૦મિલી

S-૧, ૧૫મિલી | S-૨, ૫મિલી | S-૩, ૨.૫ મિલી | S-૪, ૧.૨૫ મિલી

૧૭.બાળક ના વજન અને ઉંચાઈ માપવાનું મહત્વ

બાળક નો વધુ માં વધુ વિકાસ જીવન ના પહલા ૧૦૦૦ દિવસો માં જ થાય છે.બાળકના શારીરિક વૃધ્ધી અને વિકાસ માપવા તેનું નિયમિત વજન અને ઉંચાઈ થાય તે ખુબ જરૂરી છે. નિયમિતપણે વિકાસ માપવો જેનાથી માતાઓ વિકાસ અથવા તેમાં ઉણપ જોઈ શકે અને બાળકનો નિયમિત વિકાસ તેમજ આરોગ્ય જળવાઈ રહે. જન્મ થી ૩ વર્ષ સુધી બાળક નું નિયમિતપાણે દર મહીને વજન માપવું જોઈએ અને ૩-૬ વર્ષ ના બાળકો નુ દર ૩ મહીને વજન માપવું. આંગણવાડીમાં દર માસના બીજા મંગળવારે બાલતુલા દિવસની ઉજવણી કરવામાં આવે છે. જેમાં બાળકનું વજન અને ઉંચાઈ કરવામાં આવે છે. અને તે વજન અને ઉંચાઈ ને WHO ના ગ્રોથ ચાર્ટ અને મમતા કાર્ડ માં લખી લેવામાં આવે છે જેના આધારે બાળકનું પોષણ સ્તર નક્કી કરવામાં આવે છે.



વિકાસ દેખરેખ અને વૃદ્ધિ

ઉંમર	વજનમાં વધારો/ મહીને(ગ્રામ)
જન્મથી ૨ મહિના સુધી	૮૦૦
૩ મહિનાથી ૪ મહિના	૬૦૦
૫ મહિનાથી ૬ મહિના	૪૦૦
૭ મહિનાથી ૩ વર્ષ	૨૦૦

૧૮. અન્નપ્રાશન દિવસનું મહત્વ

બાળક ૬ મહિના પુરા કરી લે ત્યારબાદ બાળકને પહેલો ઉપરી ખોરાક આપવામાં આવે છે તે ઉપરીખોરાક આપવાની વિધિ ને અન્નપ્રાશન દિવસ કેહવામાં આવે છે અને આપડી ભારતીય સંસ્કૃતી માં પણ એનો ખુબ જ મહત્વ છે.

પુરક આહાર સારી રીતે બધા ને મળી રહે તે માટે ICDS દ્વારા દર મહિના ના ત્રીજા મંગળવારે આંગણવાડી પર અન્નપ્રાશન દિવસ ઉજવવામાં આવે છે તે સમયે તેમના વિસ્તાર માં કોઈ પણ બાળકે ૬ મહિના ની ઉંમર પૂરી કરી હોય તેમના માટે અન્નપ્રાશન ની ઉજવણી કરવામાં આવે છે. આ દિવસે બધી માતાઓ ને બોલાવી ૬ મહિના ના બાળકો ને બાલશક્તિ ની રાબ બનાવી ને પીવડાવવામાં આવે છે અને માતાઓ ને બાળકો ના ઉપરી આહાર વિષે સમજણ આપવામાં આવે છે.

અન્નપ્રાશન દિવસ ની પ્રવૃતિઓ:-

- આંગણવાડી કાર્યકર એ ધ્યાન રાખવું કે ઉજવણી શરુ થતા પહેલા બધી માતાઓ આવી ને બેસી ગઈ છે અને તેમની હાજરી ની નોંધ કરી લેવી.
- ઉજવણી શરુ કર્તા પહેલા કયી કયી પ્રવૃત્તિઓ કરવામાં આવશે તેની સમજણ માતાઓ ને આપવી.
- ઉજવણી શરુ કર્તા પહેલા માતાઓ અને બાળકો ના હાથ બરાબર ધોવડાવી લેવા.
- ઉપરી આહાર માં બાળકો ને કયી કયી વાનગીઓ આપી શકાય તેનું વાનગી નિર્દેશન કરી પરામર્શ કરવા.
- માતાઓ ને આવનારા રશીકરણ વિષે જાણકારી આપવી.
- માતાઓ ને અન્ય વાનગીઓ બતાવવા માટે પ્રોત્સાહિત કરવા.
- માતાઓ ને કોઈ પણ પ્રકાર ની સમસ્યા હોય તો તે જાણી તેના માટે સલાહ આપવી.
- પુરક આહાર વિષે માતાઓ ને બરાબર રીતે પરામર્શ આપવું.

૧૯. ન્યુટ્રી-કિચન ગાર્ડન નુ મહત્વ

વિવિધ પ્રકાર નો ખોરાક જરૂરીયાત વાડા લોકો ને મળી રહે અને સારા પ્રમાણ માં મડી રહે તે ખુબ જ મહત્વ નુ છે. આથી ન્યુટ્રી-કિચનગાર્ડન ની ભૂમિકા નો ખુબ મહત્વ છે.ન્યુટ્રી-કિચનગાર્ડન નીમદદ થી સારો અને પૌષ્ટિક આહાર મળી રહે અને સારા પ્રમાણ માં મળી રહે છે.

ન્યુટ્રી-કિચનગાર્ડન ના ફાયદા:-

- તાજા ફળો અને શાકભાજી મળી રહે.
- ફાળો અને શાકભાજી બજાર થી ખરીદવા ની જરૂર નહિ પડે જેથી પૈસા અને સમય બંને બચી રહે.
- ન્યુટ્રી-કિચનગાર્ડન માં ઉગાવવામાં આવેલા ફળો અને શાકભાજી વધારે પોષ્ટિક હોય છે.
- સીજન વિના ના ફળો અને શાકભાજી પણ મળી રહે.
- ખોરાકમાં વિવધતા લાવે.

૨૦. પરામર્શઅંગે માર્ગદર્શન

પરામર્શ એટલે શું?

પરામર્શ એટલે માતાની સાથે રહીને, તેની ભાવનાઓ અને લાગણીઓ સમજીને કામ કરવું, માતાને પોતાના નિર્ણય લેવામાં મદદરૂપ થવું, માતાને સક્ષમ બનાવવી.

પરામર્શ કરવાની રીત

૧. સાંભળવા અને જાણવા માટેનાં કૌશલ્યો

❖ **મદદરૂપ અશાબ્દિક વ્યવહાર**

- સમાન સ્તરે હોવું, ચહેરા આમનેસામને હોવા.
- ઉચિત અંતર (દુરી).
- વાતચીતમાં ધ્યાન કેન્દ્રિત કરવું.
- અવરોધ દુર કરવા.
- ધીરજ રાખવી (સમયઆપવો).

❖ **ખુલ્લા પ્રશ્નો પૂછવા**

- “કેવીરીતે?”, “શું?”, “ક્યારે?”, “ક્યાં?”, “શામાટે?”, જેવા પ્રશ્નો પૂછવા.
- આવા પ્રશ્નો ખુબ ઉપયોગી છે કારણ કે તેના ઉત્તરમાં ઘણી માહિતી જાણવા મળે છે.
- સીમિત પ્રશ્નો બહુ ઉપયોગી નથી કારણ કે તેનો ઉત્તર “હા” કે“ના” માં હોય છે.
- જો કે ક્યારેક કોઈ હકીકતની ખાતરી કરવા માટે સીમિત પ્રશ્નો પૂછી શકાય.

❖ **વાતચીત માં રસ દાખવવો**

- માથું ધુણાવીને, સ્મિત દ્વારા, “અચ્છા?”, “એમ?”, “ઓહો..” જેવા પ્રતિભાવો દ્વારા વાતચીમાં રસ દાખવી શકાય.
- આમ કરવાથી માતા વધુ વાતચીત કરવા માટે પ્રોત્સાહિત થાય છે.

❖ **પ્રતિસાદ અપવો**

- માતા જે કહે તેને સહજ જુદી રીતે દોહરાવવું.
- આમ કરવાથી તમે માતાને ધ્યાનથી સાંભળી રહ્યા ચો તેવું માતાને જણાશે.
- માતા વધુ વાતચીત કરવા પ્રોત્સાહિત થશે.

❖ **પરાનભૂતિ / સમાનુભૂતિ દાખવવી**

- આમ કરવાથી માતાને લાગશે કે તેની લાગણી/ ભાવના તમે સમજી રહ્યા છો.
- તમે માતાને એમ પણ કહી શકો કે તેની લાગણી તમે સમજી શકો છો.
- તમે માતાને સમો પ્રશ્ન ન કરો કે સહાનુભૂતિ ન દર્શાવો એ ધ્યાનમાં રાખવું પણ જરૂરી છે.

❖ **ચુકાદો આપતા (નિર્ણયાત્મક) શબ્દો ન વાપરવા**

- સારૂ/ ખરાબ, યોગ્ય/ અયોગ્ય, પુરતું/ અપૂરતું, સાચું/ ખોટું જેવા શબ્દોનો ઉપયોગ ન કરવો.
- આવા શબ્દોનો અપણે વાતચીતમાં ઉપયોગ કરીએ તો જાણ્યે અજાણ્યે માતાના મનમાં પોતે કંઈક ખોટું કરી રહી છે ટેવો ભાવ આપણે પેદા કરીએ છીએ.
- ક્યારેક જો કે,”સારૂં કર્યું” જેવી ઉક્તિ માતાની પ્રશંસા કરવા માટે વાપરી શકાય.

૨. આત્મવિશ્વાસ અને પીઠબળ આપવા માટેનાં કૌશલ્યો

❖ **માતાને સંમતિ કે અસંમતી દાખવ્યા વિના સ્વીકારવી**

- માતાની સાથે અસંમતી ન દર્શાવવી જૂઈએ.
- સાથેસાથે ગેરમાન્યતાને સમર્થન પણ ન આપવું જોઈએ.
- માતાને તટસ્થ ભાવે સ્વીકારવી જોઈએ.

❖ **માતા જે કઈ સારૂ કરતી હોય તે જાણીને તેની પ્રશંસા કરવી**

- આપણે હંમેશાં માતાની ભૂલો અને મુશ્કેલીઓ ગોતવનો પ્રયત્ન જ કરીએ છીએ, તેની સાથે આપણે માતની પ્રશંસા અને તેમનું પ્રોત્સાહન પણ કરવુ જોઈએ.

- માતા જે કઈ સારૂ કરતી હોય તે જાણીને તેની પ્રશંસા કરવાથીમાતાનો આત્મવિશ્વાસવધે છે.

❖ **વ્યવહારીક મદદ કરવી**

- કઈ પણ બોલવા કરતાં માતાને કરેલી વ્યવહારીક મદદ વધુ અસરકારક નીવડે છે.
- વ્યવહારિક મદદ કરવાની તક જોઈને ઝડપી લેવી જોઈએ.

❖ **ઉચિત માહિતી આપવી અને માતા સમજી છે કે નહી તેની ખાતરી કરવી**

- જે માહિતી માતાને તે સમયે ઉપયોગી હોય તે જ તેને આપવી.
- એક સાથે એક સમયે એકાદ બેમુદ્દા જ જણાવવા.
- માહિતી હકારાત્મક રીતે જ આપવી, ટીકાત્મક સૂરમાં ન આપવી.
- ખુલ્લા પ્રશ્નો પૂછીને માતાની સમજણની ચકાસણી કરવી અને જરૂર જણાય તો વધુ સમજાવવું.

❖ **સરળ ભાષાનો ઉપયોગ કરવો**

- સમજાય નહિ તેવા અઘરા અને વૈજ્ઞાનિક શબ્દો ન વાપરવા.
- સરળ અને સમજાય તેવા શબ્દોમાં સમજણ આપવી.

❖ **એકાદ બે સુચનો આપવા, આદેશ કે સલાહ ન આપવા**

- કશુંક કરવાનો આદેશ આપવાથી માતાનો આત્મવિશ્વાસ ડગી જાય છે.
- મૈત્રીભર્યું સુચન આપી માતા વધુ સારી રીતે નિર્ણય લઈ શકે તેનો આત્મવિશ્વાસ આપવો.

બાળકોના ઉપરી આહાર માટેના ૧૦ માર્ગદર્શક સિધ્ધાંતો

જેમતિરંગો ત્રણ રંગો વગર અધુરો છે, તેમ સમતોલ આહાર પણ આ રંગો વગર અધુરો છે

બાળક છ મહિનાનું થાય ત્યારબાદ તેના રોજીંદા આહારમાં જુદા જુદા ખાધ જૂથોનો સમાવેશ કરો

“સહી પોષણ – દેશરોશન”

Appendix-9 Abstract of ICPH

INTERNATIONAL CONFERENCE ON PUBLIC HEALTH
24th - 26th March, 2021
icph 2021
Managed by
NAVRACHANA UNIVERSITY
Centre for Public Health

Oral Presentation - 12

Dr. Hemangini Gandhi[1], Dr. Nandani Shrivastava[2], ***and Bhumika Thakur[3]***

[1, 3]Department of Foods and Nutrition, Faculty of Family and Community Sciences,
The Maharaja Sayajirao University of Baroda, Vadodara

[2]Aatapi foundation, Vadodara, Gujarat.

Email: hgandhi1950@gmail.com

Title : Complementary feeding practices of rural children of Bharuch district of Gujarat

Background: Complementary feeding practices contribute to saving lives, preventing stunting, and increasing the economic growth of the country as the first 24 months of life offer a critical window of opportunity to avert the irreversible and life-long damage caused by poor feeding practices.

Methodology: All the 6-23 months old children of selected 13 Anganwadi centers from 6 villages of Jambusar block in Bharuch district whose mothers gave consent (n=125) were enrolled in the study. The data on complementary feeding practices of children was taken. through 24-hour dietary recall method and pre-tested semi-structured questionnaire.

Results: Dietary practices data revealed that only 19.2% children get minimum dietary diversity, whereas, 72% children get minimum meal frequency and 20% children get minimum acceptable diet. We observed that 96% children consume unhealthy food whereas, 45.6% children consume sugar-sweetened beverages. The results have also showed that children with zero consumption of fruits and vegetables were 45.6%. Continued breastfeeding till 24 months was reported by 74% of the mothers.

Conclusion: There is a need to strengthen Annaprashan day under ICDS programme and timely sensitizing mothers along with other family care givers on first foods for young children.

Keywords: Complementary feeding, ICDS, Minimum acceptable diet, First foods.

Appendix-10 Ethical Certificate

Institutional Ethics Committee for Human Research (IECHR)

FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Ethical Compliance Certificate 2020 – 2021

This is to certify that **Ms. Thakur Bhumika Maheshbhai**'s study titled, **"Complementary feeding: comprehensive nutrient gap analysis of children (6-23 months) and capacity building of frontline workers (FLW's) of selected villages of Jambusar block in Bharuch district"** has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Science, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number **IECHR/FCSc/2020/58.**

Prof Mini Sheth
Member Secretary
IECHR

Prof Shagufa Kapadia
Chairperson
IECHR

Appendix- 11 - Photogallery

1. Training given for Data collection to Arogya Sathis

2. Data Collection

3. Frontline Workers Knowledge

4. Training and refresher traning done

5. Recipe Demonstration for Frontline workers