Prevalence of Malnutrition and Associated Factors among Children Aged 3-5 Years Attending ICDS Anganwadis: A Study of Northern India



Sponsored by: National Human Rights Commission (NHRC) New Delhi, India Conducted by: Prof. Archana Dassi Professor In-charge, Centre for Early Childhood Development and Research, Jamia Millia Islamia, New Delhi-110025

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> Prof. Archana Dassi Principal Investigator September 2023

DISCLAIMER

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LIST OF ABBREVIATIONS

NHRC - National Human Right Commission AWW- Anganwadi Worker AWC- Anganwadi Centers CDPO-Child Development Project Officer DCPO- District Child Project Officer NFHS- National Family Health Survey ICDS-Integrated Child Development Services POSHAN- Prime Minister's Overarching Scheme for Holistic Nutrition **GNR-Global Nutrition Report** PEM-Protein Energy Malnutrition MPI-Multidimensional Poverty Index MDG-Millennium Development Goals NE- Nutritional expert SAM-Severe acute malnutrition MAM-Moderate acute Malnutrition EAG-Empowered Action Group **RBD-Regression Based Decomposition SES-Social Economic Status** UNICEF-United Nations Children's Fund DSWO-District Social Welfare Officer MTC-Medical Training Centers SHG-Self Help Group

SMC-School Management Committee ANM-Auxiliary Nurse Midwife ASHA-Accredited social health Activist AWH-Anganwadi Helper WAZ-Weight-For-Age HAZ-Height for Age WHZ-weight for Height DHS- Demographic Health Survey NNM-National Nutritional Mission **PSU's-** Primary Sampling Units **SD-Standard Deviation** ST-Schedule Tribe SC-Schedule Caste **OBC-Other Backward Classes** SPSS-Statistical Package for the Social Sciences MUAC-Mid-upper Arm Circumference **BDO-Block Development Officer** ECD-Early Childhood Development **EFA-Education for All GDP-Gross Domestic Product Gms-Grams** etc.-Et cetera fig.- Figure

i.e-that is

S.No-Serial Number

No.-Number

GDP-Gross Domestic Product

GRID-Global Resources Information Database

ILO-International Labor Organization

Kgs- Kilograms

Mm- Millimetre

NG0-Non- Government Organization

PDS-Public Distribution System

PHCs-Primary Distribution System

UN-United Nations

UNDP-United Nation Development Programme

WHO-World Health Organization

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Chapter 1

INTRODUCTION

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Malnutrition is a prevalent problem affecting everyone at some time in their lifespan, but children under 3 to 6 years are at a greater risk of malnutrition. Malnourished children may be short their age, thin or bloated, restless and have weakened immune systems. Nutritional disorders can affect any system in the body and the senses of sight, taste, and smell. They may produce anxiety, changes in mood and other psychiatric symptoms.

Despite India's 50% increase in the Gross domestic product (GDP) since 2013, more than onethird of the world's malnourished children live in India. Among these, "half of the children under three years old are underweight" (Singh et al., 2019). One of the major causes of malnutrition in India is economic inequality. Due to the low economic status of some parts of the population, their diet often lacks in both quality and quantity. "Women who suffer from malnutrition are less likely to have healthy babies" (Sahu et al., 2015). Nutrition deficiencies inflict long-term damage to both individuals and society. Compared with their better-fed peers, "nutrition-deficient individuals are more likely to have infectious diseases such as pneumonia and tuberculosis, which lead to a higher mortality rate (Katonaet al., 2020)". Besides, nutrition-deficient individuals are less productive at work. Low productivity not only gives them low pay that traps them in a vicious circle of under-nutrition but also brings inefficiency to the society, especially in India where labor is a major input factor for economic production. On the other hand, over-nutrition also has severe consequences. In India national obesity rates in 2010 were 14% for women and 18% for men with some urban areas having rates as high as 40%. According toKumar & Sinha, 2020, "Obesity causes several non-communicable diseases such as cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases".

Under nutrition Malnutrition results from a deficiency of good nutrition, caused by not having adequate food to eat, or eat, or not consuming enough of the rights things. Many poor nutritional outcomes begin in the uterus and are manifested as LBW, prematurity and intrauterine growth restriction. Malnutrition is a deficiency or improper intake of energy and nutrition. It includes under nutrition (wasting, stunting, underweight, and micronutrient malnutrition) and over nutrition (obesity, some malignancies, and non-communicable illnesses). Mostly term malnutrition is widely used to denote Undernutrition, Malnutrition results from the interaction between poor diet and diseases which leads to nutritional deficiencies observed among underfive children.

Child malnutrition estimates for the indicators stunting, wasting, overweight and underweight describe the magnitude and patterns of under-and overnutrition. UNICEF-WHO-WB Joint Child Malnutrition estimates "inter-agency group regularly updates the global and regional estimates in prevalence and numbers for each indicator." The key findings trends and for the first time, country-level estimates are also presented, with a summary of the enhanced methodology for deriving country level model-based estimates for stunting and overweight. Country progress assessment towards the 2030 targets is provided with summaries by region.

Effect of Malnutrition

Malnourished children may be short for their age, thin or bloated, listless and have weakened immune systems. Malnutrition refers to deficiencies or excesses in nutrient intake, imbalance of essential nutrients or impaired utilization. The double burden of malnutrition consists of both under nutrition and overweight and obesity, as well diet-related non communicable diseases.

"Malnutrition can cause permanent, widespread damage to a child's growth, development, and well-being" (UNICEF). "Stunting in the first 1,000 days is associated with poorer performance in school, both because malnutrition affects brain development, and because malnourished children are more likely to get sick and miss school." A mother's chance of dying during childbirth can be increased by hidden hunger, which can also lead to blindness (vitamin A deficiency), learning impairment (iodine deficiency), and iron deficiency in the child. Obesity and being overweight can contribute to major conditions including cardiovascular disease and type 2 diabetes. Furthermore, this interference with children's physical and cognitive development affects them into adulthood, jeopardizing their futures and economic opportunities.

Indicators of malnutrition in children: wasting, stunting, underweight, and Overweight: Wasting (assessed via weight-for-height): Weight-for-height index measures body mass in relation to body height or length and describes current nutritional status. Children whose Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered thin (wasted), or acutely undernourished. Children whose weight-for-height Z-score is below minus three standard deviations (-3 SD) from the median of the reference population are considered severely wasted. Sample: Children under age five years.

Stunting (assessed via height-for-age):Height-for-age is a measure of linear growth retardation and cumulative growth deficits. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age (stunted), or chronically undernourished. Children who are below minus three standard deviations (-3 SD) are considered severely stunted. Sample: Children under age five years.

Underweight:weighing less than the normal amount for one's age, height, and build. Underweight children. Underweight adults typically have a body mass index of less than 18.5. Overweight: Children whose weight-for-height Z-score is more than 2 standard deviations (+2 SD) above the median of the reference population are considered overweight. Sample: Children under age five. Nutrition Research at the Public Health Foundation of India (PHFI), Delhi said that "obesity is increasingly becoming a health issue in the country." The share of obese men increased in 19 of the 22 states and Union territories for which the data was available. The share of obese women increased in 16 states. "Obesity and obese eating have been on the rise" (NFHS-5). Preliminary findings of NFHS-5 have started to confirm this massive rise across all states.

The first phase data of NHFS-5 shows that "overweight among children has increased in 20 states/UTs. For the first time, the 2019-20 NFHS has measured the waist circumference and hip circumference of women and men between 15 and 49 years of age". This information was used to calculate the waist-to-hip ratio (WHR), which helps to identify the distribution of body fat and predicts abdominal obesity. Abdominal obesity is associated with an increased risk of type-2 diabetes mellitus, myocardial infarction, stroke, and premature death. According to the NFHS-5 report, "more than half (57 percent) of women and 48 percent of men have a WHR that puts them at a substantially increased risk of metabolic complications."

Underweight: Weight-for-age is a composite index of weight-for-age and weight-for-height. It considers both acute and chronic under nutrition. Children whose weight-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are classified as underweight. Children whose weight-for-age Z-score is below minus three standard deviations (-3 SD) from the median are considered severely underweight. Sample: Children under age five years 375.

As per Unicef, these indicators are defined as follows:

"Stunting - height-for-age <-2 SD of the WHO Child growth standards median.

Wasting - weight-for-height <-2 SD of the WHO Child growth standards median; and

Overweight - weight-for-height >+2 SD of the WHO *Child growth standards* median.

Underweight - weight-for-age <-2 standard deviations (SD) of the WHO *Child growth* standards median."

Table 1.1 Cut-off values for public health significance

Indicator	Prevalence cut-off values for public health significance	
Stunting	<2.5%: very low	
	2.5 to <10%: low	
	10 to <20%: medium	
	20 to <30%: high	
	≥30%: very high	
Wasting	<2.5%: very low	
	2.5 to <5%: low	
	5 to <10%: medium	
	10 to <15%: high	
	≥15%: very high	
Overweight	<2.5%: very low	
	2.5 to <5%: low	
	5 to <10%: medium	
	10 to <15%: high	
	≥15%: very high	

Source: De Onis, M., et al. (2018). Prevalence thresholds for wasting, overweight and stunting in e children under 5 years. Public health nutrition, 22(1), 175-179.

The estimated number of underweight, malnourished and severely malnourished children under 5 years of age is obtained under the National Family Health Survey (NFHS) conducted by the Ministry of Health & Family Welfare. As per the recent report of NFHS-5 (2019-21), the nutrition indicators for children under 5 years have improved as compared with NFHS-4 (2015-

16). Stunting has reduced from 38.4% to 35.5%, Wasting has reduced from 21.0% to 19.3% and Underweight prevalence has reduced from 35.8% to 32.1%.

Government has accorded high priority to the issue of malnutrition and is implementing several schemes like Anganwadi Services, Scheme for Adolescent Girls, and Pradhan Mantri Matru Vandana Yojana (PMMVY) under the Umbrella Integrated Child Development Services (ICDS) Scheme as direct targeted interventions to address the problem of malnutrition in the country. Children with Severe Acute Malnutrition are treated at the Nutrition Rehabilitation Centres established by the Ministry of Health and Family Welfare.

Further, POSHAN Abhiyaan launched on 8th March 2018, aims to reduce malnutrition in the country by adopting a synergized and result oriented approach. Mission Poshan 2.0, an integrated nutrition support program has been announced in the budget 2021-2022 for all States/UTs. It seeks to strengthen nutritional content, delivery, outreach, and outcomes with focus on developing practices that nurture health, wellness and immunity to disease and malnutrition. Steps have been taken to improve nutritional quality and testing in accredited labs, strengthen delivery and leverage technology under Poshan Tracker to improve governance.

States/UTs have been advised to promote use of AYUSH systems for prevention of malnutrition and related diseases. A program to support the development of *Poshan Vatikas* at Anganwadi Centres to meet dietary diversity gap leveraging traditional knowledge in nutritional practices has also been taken up. Guidelines were issued for transparency and accountability in delivery of supplementary nutrition and to track nutritional outcomes on 13.01.2021.

State	District	Children under 5 years who are stunted (height-
		for-age) (%)
Jharkhand	PashchimiSinghbhum	60.6
Bihar	Sheikhpura	53.6
Uttar Pradesh	Bahraich	52.1
Meghalaya	West Khasi Hills	59
Chhattisgarh	Bijapur	53.8

Table 1.2 Top Districts in Stunting

Source: NFHS 5

Table 1.3 Top Districts in Wasting

State	District	Children under 5 years who are wasted (weight- for-height) (%)
NCT of Delhi	New Delhi	6.8
Bihar	Arwal	36.8
Gujarat	The Dangs	40.9
Maharashtra	Dhule	38.9
Telangana	Komara Bheem Asifabad	35.7

Source: NFHS 5

State	District	Children under 5 years who
		are underweight (weight-
		for-age) (%)
Jharkhand	PashchimiSinghbhum	62.4
Bihar	Arwal	52.9
Maharashtra	Nandurbar	57.2
Gujarat	Narmada	52.8
Telangana	Adilabad	52

Table 1.4 Top Districts in Underweight

Source: NFHS 5



Fig 1.1 Top Districts in Overweight

Nutritional disorders can affect any system in the body and the sense of sight, taste, and smell. They may also produce anxiety, changes in mood and other psychiatric symptoms. Other symptoms include pale, thick and dry skin, bruising easily, rashes, changes in skin pigmentation,

Source: Source: NFHS 5

thin hair that is tightly curled and pulls out easily, achy joints, bones that are soft and tender, gums that bleed easily, tongue that may be swollen or shriveled and cracked, night blindness, increase sensitivity to light and glare.

International Status: The World Bank estimates that "India is one of the highest-ranking countries in the world for the number of children suffering from malnutrition"(Schaible and Kaufmann, 2017). "The prevalence of underweight children in India is among the highest in the world and is nearly double that of Sub-Saharan Africa with dire consequences for mobility, mortality, productivity, and economic growth"(Hruby and Hu, 2015).

The 2020 Global Nutrition Report highlighted that 'progress made to tackle malnutrition in all its forms was too slow'. The 2021 Global Nutrition Report states that despite some achievements and partial success, the current pace of change is too slow to achieve the targets by 2025 in the great majority of countries. The most recent data continues to show that an unacceptably large number of people are still affected by malnutrition. Globally, 20.5 million newborns (14.6% of all live births) have a low weight at birth. Of all children under 5 Years of age, one in five are stunted (149.2 million), 45.4 million (6.7%) are wasted, and 38.9 million (5.7%) are overweight.

Globally, there were 149.2 million stunted children under the age of five, 45.4 million wasting children, and 38.9 million overweight children in 2020. 38.9 million children are overweight, 45.4 million are wasted, and there are stunted youngsters. Everywhere but Africa is seeing a decrease in the number of stunted children. More than half of all wasting children reside in Southern Asia, and over three-quarters of all severely wasting children are found in Asia. When it comes to the targets, the majority of countries have made at least some progress toward the stunting target, which is where the most success is being made at the national level. On the other hand, almost half of all countries have either not improved or are getting worse when it comes to overweight people.

In 2022, 22.3 per cent, or more than one in five children under age 5 worldwide had stunted growth. That said, overall trends are positive. Between 2000 and 2022, stunting prevalence globally declined from 33.0 per cent to 22.3 per cent, and the number of children affected fell from 204.2 million to 148.1 million.

National Status: The 2021 Global Nutrition Report (GNR 2021) revealed five out of six global maternal, infant and young children nutrition (MIYCN) targets to address stunting, wasting,

anemia, low birth weight and childhood obesity are off track. At the same time, the global nutrition target (GNT) to combat the growing prevalence of non-communicable diseases (NCDs) is also off track.



India is the second most popular country having approximately 1.3 billion populations and in home to 190 million undernourished people-the highest in the world. Moreover, two of three preschool children in India are malnourished. Malnutrition is defined as a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients. Undernutrition is which results from insufficient food eaten over an extended period. As per World Health Organization (WHO) Report, "approximately 45% of deaths among children under 5 years of age are linked to Undernutrition, as malnutrition presents with serious, long-term consequences impeding motor, sensory, cognitive, social, and emotional development."

According to India's national policy, "the nation's children are a supremely important asset. Their nurture and solicitude are our responsibility". The Government of India has launched the Integrated Child Development Services (ICDS) program in 1975 with the objective of improving the nutritional status of pre-school children in addition to other services.

Integrated Child Development Services (ICDS) scheme launched in 1975 continues to be India's flagship child welfare programme to meet the nutritional needs of millions of children and a multispectral strategy for eradicating malnutrition. Though the ICDS Scheme is taking measures to combat this problem, India's progress in reducing child malnutrition has been slow. The present study will determine the nutritional status as well as will also try to investigate the challenges and associated factors with the nutritional indicators of preschool children (3-5 years of age) attending AWCs, challenges and noteworthy nutrition practices at the AWCs and home and designing of nutritional interventions for children attending AWCs. Hence this study is not

only significant for academic purposes but will also contribute to program implementation and outreach.

The under-five mortality rate (U5MR) is the number of deaths per 1,000 live births of children between birth and five years of age. Under-five mortality rate has reduced from 78% to 60%

Between NFHS 4 (2015-2016) and NFHS 5 (2019-2021), the percentage of children under the age of five who are moderately underweight decreased from 35.8% to 32.1 %, the percentage of children who are moderately stunted decreased from 38.4% to 35.5 %, the percentage of children who are moderately wasted decreased from 21% to 19.3%, and the percentage of severely wasted children increased slightly from 7.5% to 7.7 %, 7.3% of the children that are stunted live in rural areas, compared to 30.1% in urban areas. Bihar (42.9%), Uttar Pradesh (39.7%), and Jharkhand (39.6%) have the highest rates of stunting, while Sikkim (22.3%) and Pondicherry (20%) have the lowest rates, according to the state wise data.

Among children belonging to the SC category, 42.8 percent are stunted, 21.2 percent are wasted, and 39.1 percent are underweight. NFHS-4 found 43.8 percent of ST children under the age of five were stunted, 27.4 were wasted. The NFHS-5 survey work has been conducted in around 6.37 lakh sample households from 707 districts (as of March 2017) of the country from 28 States and 8 UTs, covering 7,24,115 women and 1,01,839 men to provide dis-aggregated estimates up to district level.

Indicators	NFHS-4 (2015-16)	NFHS-5 (2019-21)
Institutional births (per cent)	78.9	88.6
Neonatal mortality rate (per 1000 live births)	29.5	24.9
Infant mortality rate (per 1000 live births)	40.7	35.2
Under-five mortality rate	49.7	41.9

Table 1.5 Indicators of mortality and birth in India as per NFHS 5

(per 1000 live births)	

The NFHS-5 results indicate that progress has been made in almost all areas. However, Bihar and Uttar Pradesh need to strengthen their family planning and maternal and child health programmes as well as improve women's status to bring TFR to replacement level or below.

Government of India started Integrated Child Development Services (ICDS) Scheme in 1975 to meet nutritional requirement of children 0f 0-6 years of age and lead to holistic development as the services provided under scheme include non-formal preschool education also along with provision of supplementary nutrition. Considering Malnutrition rates remaining alarming in children below 6 years of age, therefore, it becomes pertinent to elicit the factors that affect nutritional status of children.

Malnourished children are at risk infection, and they are more prone to death due to common infantile respiratory and diarrheal disease. The United Nations Decade of action on Nutrition from 2016 to 2025 proclaimed to eliminate malnutrition and guarantee worldwide access to improved diets everywhere and for every (SDG2) and ensuring healthy lives for all ages.

Prevalence of under nutrition among under five children according to the National Family Health Survey 4 (NFHS) 2015-16 in India shows that 35.7% under five children were underweight, 38.4% were stunted and 21% were wasted. Considering alarming in children, it becomes pertinent to elicit the factors that affect nutritional status of children. So, this study was undertaken.

The fundamental causes of protein-energy malnutrition (PEM), which is caused by inadequate dietary intake or the consumption of foods containing low-quality proteins, are social, economic, biological, and environmental variables. Low weight for height is wasting. It denotes current weight loss because children who are exposed to infectious disorders like diarrhea or who ingest inadequate meals experience weight loss. Low height for age is known as stunting. Children who are too short for their age are considered stunted. Early-life malnutrition can cause stunting, which can persist a lifetime. Approximately 149 million children under the age of five are stunted worldwide. This is caused by chronic under-nutrition, which is usually linked to low

socioeconomic level, inadequate mother nourishment, recurrent illness, and/or unsuitable child feeding practices.

Factor responsible for malnourished condition of children in Northern state of India; Bihar, Jharkhand, Uttar Pradesh, Delhi:

Several factors are responsible for high incidence of malnutrition in children which include nonavailability of health services, absence of community workers, low institutional delivery, and non-access to cheap medicines, over population apathy towards family planning, poor land, and water management for agricultural, Illiteracy, lack of industrialization. "In Bihar child malnutrition rate is higher than any country in the world(Menon et al 2009, Grebmer et al 2011)." These apart, cultural practices as early marriage and pregnancy that contribute to malnutrition rate in the state. According to the government's own figures over 20% in certain rural areas are severely malnourished. There are other hindrances too, that include non-access to cheap medicines low intake of nutritious food, low birth weight babies and non-spacing and anemia amongst women.

Malnutrition is a serious public health problem in Jharkhand. As per MoHFW CNNS2016-17, 6.7% children under the age of 5 years are Severe Acute Malnourished (SAM) in Jharkhand. SAM is an important preventable and treatable cause of morbidity and mortality in children 5 years. As per the National Family Health Suvey-4 data for Jharkhand, every second under-5 child in the state is stunted (45 per cent) and underweight (47 per cent), and every third under-5 child is affected by wasting (29 per cent). Neely 70 per cent of children between 6-59 months are anemic.

In Jharkhand supplementary nutrition program, children and pregnant and lactating women are entitled to receive food item such as sugar, semolina, cooking oil, ghee of clarified butter, groundnut, pigeon peas, potatoes. The survey report (CNNS, 2016-18) shows "over 89 per cent of families with kids 3-6 years reported receiving rice whereas only 16 per cent claimed to have received ghee and nearly 40 per cent said they received cooking oil."

Assessing risk factors of malnutrition in Uttar Pradesh, living alone and being socially isolated having limited knowledge about nutrition or cooking. Alcohol or drug dependency, low income, lack of availability of basic need, lack of awareness about medical facility or poverty is the major factor of responsible malnutrition children in Uttar Pradesh.

"More than half of all children under five in Bacharach district suffer from stunting, and the figures are similar in adjoining Shravasti and Balrampur; all three are among India's four poorest districts", according to the NITI Ayog's Multidimensional Poverty Index (MPI), 2021. According to an estimate by the Union Ministry of Women and Child Development, of the 33 lakh malnourished children in India, 1.86 lakhs are in Uttar Pradesh.

Healthcare workers, officials in Balrampur districts say there's no one reason behind high malnutrition level in one of most backward regions in India. Balrampur Anganwadi worker's parlance, "that's code for severe acute malnutrition (SAM); a milder *peela* (yellow) stands for moderate acute malnutrition (MAM)". Delhi may be one of the biggest metropolises in the world with a population of around 18 million, but nearly half of its people live in slums and unauthorized colonies.

The two most important issues Delhi is currently facing with urban growth are urban poverty and slums. Rapid urbanization is still occurring, which has negative effects on nutrition and health, particularly for young people. Early childhood malnutrition has detrimental long-term repercussions on both cognitive and physical development. It is essential for the nation's overall development to address the dietary issues faced by the urban poor. A person's quality of life is greatly and permanently impacted by their first six years of life.

The status of malnutrition in Delhi is relatively not good when there are 26.1% of under-weight; 42.2% of stunted children and 15.4 % of wasted children (all under five years) who have been categorized based on their nutritional status. The extreme and harsh living conditions in urban slums make children highly vulnerable in terms of socio-economic and physical security. The slums in Delhi are characterized by their appalling conditions with lack of basic hygiene and sanitation facilities, toilet facilities and access to safe drinking water.

People are malnourished if they are unable to utilize fully the food they eat, for example due to diarrhea or other illnesses (secondary malnutrition), or if their diet does not provide adequate calories and protein for growth and maintenance.

"More than one third of children younger than five years living in the Indian capital's slums are malnourished " as stated by Thomson Reuters Foundation, 'showed government child health schemes were not reaching the poor.' The study carried out by the charity child Rights and You (CRY), found "that 36% of 3650 children surveyed in Delhi's slum lacked nutritious food and

were underweight". The CRY study found that just 30% of children under six were covered by the Integrated Child Development Scheme (ICDS), a massive state-run scheme to feed children of poor families. It also found that practices such as bottle feeding, child marriage and discrimination against women were occurring in slum communities with little awareness that they were contributing to child malnutrition. In 2012, Prime Minister Dr. Manmohan Singh stated "that the problem of malnutrition is a matter of national shame". Despite that, fewer efforts have been made to tackle the gravity of the situation.

Of that percentage, one-third exhibited severe wasting. According to the survey, overall, malnutrition was higher in girls than in boys (38% vs 34%). It is particularly difficult for newborns and infants whose health is totally dependent on the mother's availability to breastfeed, the caregiver's and the household's capacity to prepare wholesome meals, the standard of the public healthcare system, and the general support of the community.

In Bihar high incident of child marriage and teenage pregnancies has been the major for child under nutrition, with long term impact on health, education, and employment. The minister in Bihar also admitted that "about 63.5% of children in the age group of six months to five years were found to be anemic in the state also said that health cards were distributed among 1.22 crore children up to 18 years, offering supplementary medicines to deal with severe malnutrition to deal with severe malnutrition, suffered by over 42% of the children in the state".

"Around 41% of children suffer from low weight in respect to their age, while 2.40% are obese" said the Bihar minister citing the latest National Family and Health Survey (NHFS-5) data. Bihar is the third most populous state in India and is home to 47 million children, almost half (46%) of the State's 104 million people and the highest proportion of children of any state in India. Children in Bihar face many deprivations owing to wide-spread poverty, deep-rooted socio-cultural and gender inequalities, caste divisions, poor infrastructure, lack of basic services and recurring natural disasters.

In 2015, the state government committed to improving development indicators through a mission mode 2020. The state adopted seven policy resolutions titled '*Viksit Bihar keliye Saat Nishchay*' for inclusive government and good governance agenda. UNICEF works with the government of Bihar and key stakeholders across the state to promote and protect the rights of children, especially those from the most marginalized communities.

The indicators stunting, wasting, overweight and underweight are used to measure nutritional imbalance; such imbalance results in either under nutrition (assessed from stunting, wasting and underweight) or overweight. Child growth is internationally recognized as an important indicator of nutritional status and health in populations.

The proportion of stunted children indicates the combined impact of malnutrition and infections from birth, as well as prenatal care. Thus, this metric may be used to infer unfavorable environmental circumstances or a chronic limitation of a child's growth potential. The proportion of children who are underweight (low weight for age) can be an indicator of wasting (low weight for height), which can mean acute stunting or weight loss, or both. Underweight is hence a composite signal that can be challenging to understand. The Global Nutrition Monitoring Framework's core set of indicators includes stunting, wasting, and overweight in children under the age of five as major outcome indicators to track the development of global nutrition.

REVIEW OF LITERATURE

Malnutrition in children under five is a major issue for Indian health officials, according to the research conducted in 2015 by Dr. Swaroop Kumar Sahu. In order to address malnutrition in children under five in India, the current review set out to evaluate the prevalence of under- and overnutrition, as well as the factors that contribute to it. Medline, Google, and other sources provided up-to-date information. Information was examined and analyzed for inconsistencies. Current research indicates that undernutrition is quite prevalent in children under five, with rates varying greatly depending on the evaluation methods used (underweight: 39-75%, stunting: 15.4-74%, wasting: 10.6-42.3%). There have been few studies on evaluating the overnutrition status of children under five. For the purpose of organizing the control measures, it is important to examine the distribution of different risk factors and their impact on the nutritional status of children in each setup.

It has been noted that the malnutrition issue in India is a concentrated phenomenon, meaning that a small number of states, districts, and villages bear a disproportionately significant burden of the disease; only five states and half of the villages account for almost 80% of the disease. Malnutrition is a factor in over 2.3 million fatalities annually among children aged 6 to 60 months in underdeveloped nations, or almost 41% of all deaths in this age range.

By reducing the percentage of underweight children under five who experience hunger, Millennium Development Goal 1 (Target 2) seeks to cut the number of hungry people in half between 1990 and 2015. Even though there are several intervention programs in place in India, the prevalence of undernutrition among children under the age of five has not significantly decreased. The nutrition status of children under five is also being impacted by the current eating patterns, which is leading to a rise in the incidence of adult non-communicable illnesses such obesity, diabetes, hypertension, and coronary heart disease. According to Global Nutrition report (2021) different regions of the nation were found to have varying rates of underweight children (between 39% and 75%), stunting (between 15.4% and 74%), and wasting (10.6% to 42.3%).

According to the study, a number of risk variables were linked to undernutrition in children under the age of five. According to a West Bengal research (Mondal and Ghosh, 2019), children with higher birth orders and those from lower-income households had a noticeably greater percentage of malnutrition among them than did male children. It was discovered that the growth and nutritional condition of preschool-aged Indian children varied significantly between rural and urban areas, as well as by gender. In addition, it was shown that girls consumed less food than boys. Infancy was a time of widespread poor feeding practices, with 56.7% of infants aged 6 to 9 months getting supplemental foods and 46.4% of children under six months obtaining exclusive breastfeeding.

Data on the prevalence and contributing factors of overweight and obesity in children under five in India are scarce. Preschoolers in Eastern Europe and the Middle East had the highest prevalence of overweight, while those in India and Sri Lanka had the lowest (Priss-Ustun et al, 2014). Despite having a lower prevalence (4.9% in 2010) than Africa, Asia has more affected children (18 million), despite this difference. A study of children aged 5 to 16 in Kerala's Ernakulum District revealed a rising tendency in childhood obesity throughout the two-year period between 2003 and 2005 (Kowsalya et al, 2008).

It is critical to precisely measure the scope of the malnutrition issue affecting children under the age of five. The three anthropometric measurements that are most frequently used to evaluate children's nutritional status are weight, height, and BMI for age. Weight for age, height for age, BMI for age, and wasting (weight for height regardless of age) are used to determine the

prevalence of undernutrition in children under five. Youngsters may be underweight due to stunting, wasting, or both stunting and wasting (Rah, J.H et al, 2015).

Malnutrition may result from responsive supplementary feeding, in which a mother feeds her kid in response to cues from the child and poor psychomotor abilities. Recent research (Jubayer, A . et al, 2022) on infants aged 8 to 20 months revealed that while weight growth was not observed, children's self-feeding and verbal response significantly improved as a result of the responsive feeding intervention. More nutritional availability was needed for weight gain, particularly in locations with high levels of food insecurity.

Malnutrition is linked to factors associated with socioeconomic inequality, including poverty, illiteracy, ignorance of food quality, big families, and unhygienic living conditions. Families with a lower family wealth index have a 2.7-fold higher rate of malnutrition (Humphrey, J.H, 2009). Malnutrition is indirectly impacted by both political commitment and rapid population increase. Therefore, a decrease in malnutrition may arise from the nation's socioeconomic progress and the participation of all relevant parties.

According to a 2021 study on the nutritional status of Anganwadi children under ICDS at the Rural Field Practice Area, Adichunchanagiri Institute of Medical Sciences, 'more female children than male children were underweight and stunted. Children's nutritional status is frequently the outcome of numerous interconnected variables.' The report also made the following recommendations: "The ICDS program needs to be improved in order to provide health promotion activities and nutrition education to underprivileged and vulnerable populations". It is important to inform parents about affordable, readily available, and healthful food options in their community. These actions will contribute to these kids' improved nutritional status. The quality of supplemental nutrition needs to be improved, particularly for high-protein and high-calorie diets. It is necessary to combine various child welfare initiatives and carry them out, oversee, and monitor them efficiently. The primary causes of low child nutrition status are frequently attributed to poverty, which also affects access to sanitary facilities, health care, safe drinking water, and a high rate of infectious diseases. Additionally, low educational attainment of utilization. and lack awareness lead service to poor

WHO recommended cutoffs in 1995 for interpreting the prevalence of stunting, underweight wasting, and overweight in a given nation. Critical rates are those that are at or above 40%, 30%, and 15%, respectively, for children under five. According to data from UNICEF's State of the World's Children report," these three nutrition indicators accounted for 39%, 29%, and 15% of all cases in India between 2010 and 2015".

Research on Santal children (Stiller, C.K. et al, 2020) in the Paschim Midinapur District of West Bengal found "considerably greater rates of stunting (54.2%), underweight (65.2%), and wasting (20.1%) in comparison to the study's findings." Similar rates of stunting (47.8%), lower rates of underweight (31.1%), and greater rates of wasting (29.6%) were observed among Santal children in Birbhum District, West Bengal. The Santal-Munda tribal children in West Bengal's Parganas District experienced greater rates of wasting (32.7%) but were less affected by HAZ (Height for Age) and WAZ (Weight for Age - 21.0% and 38.7% of cases). The frequency of undernutrition was significantly lower in Santal children in Purulia District, West Bengal (HAZ, 26.3%), WAZ, 38.2%, and WHZ, 12.7%).

In Northern India, 2.2% of under-5-year-old rural children had severe wasting, whereas in this study, the prevalence was 3.3%, or 6.7%, in rural West Bengal. This study confirmed that among tribal children aged 6 to 39 months, there were high rates of anemia, undernutrition, and illness. For all three indices, the rates of underweight, wasting, and stunting far beyond the crucial population cutoffs. Nearly all children were impacted by anemia. It is advised to implement multi-sectoral programmatic actions that include the key pillars of nutrition, agriculture, and health in order to address identified independent drivers of anemia, such as the child's age being under 24 months, low WAZ scores, morbidity, low maternal HB level, and lack of dietary diversification. These actions should be implemented before the child turns two years old.

In order to address both iron deficiency and infection, strategies for preventing childhood anemia and undernutrition at a sustainable level must ensure children's nutritional diversification and enhanced access to preventative health care. Preventing diseases and treating infections in toddlers early on can help prevent initial weight loss, which could eventually hinder appropriate linear growth. Undernutrition is specifically caused by frequent morbidity, and this study demonstrated a correlation between anemia and underweight. In the world under the age of five, there were 51 million wasted children (7.5%) and 151 million stunted children (22.2%) in 2017. In Asia, the corresponding numbers of under-5 stunted, wasting, and overweight children were 83.6, 35.0, and 17.5 million. It is surprising to learn that in 2017, Asia was home to about half of the world's under-5-year-old stunted and overweight children. Asia was home to two thirds of the world's wasted children in the same age group (UNICEF, WHO, and World Bank, 2018). According to the National Family Health Survey-4, India's trends in the baby and under-5-year-old mortality rate are 41 and 50 per 1000 live births respectively.

Thirty eight percent of children under five are stunted, and 36 percent are underweight. Children from ST, SC, and OBC castes are more likely to experience it in both situations (NFHS-4, 2015-16). However, the prevalence of stunting in South Asia was 33.3 percent in 2017, compared to 22.2 percent worldwide (UNICEF, WHO, and World Bank, 2018). These numbers point to how severe malnutrition is in India. Children in Jangal mahal areas of Purulia, West Bengal, have poor nutritional status, according to observations (Mandal et al., 2017).

A country cannot develop if its population are undernourished. Early childhood nutrition intervention can lower a child's risk of illness and death. When given to children or any people on a regular basis, a balanced diet can only make a positive impact on society. People who are malnourished and unwell will not be able to support society for a very long period. In the Asha C.D. Block of the Purulia district, stunting (63.51 percent) and underweight children (67.75 percent) are the most common conditions. In general, it is found that female children are more undernourished than male children. Compared to other age groups of children, the 24- to 35-month and 12- to 23-month age groups under the age of five are reported to be more susceptible to incidences of stunting, wasting, and underweight. Out of all the categories of undernutrition, stunting, wasting, and underweight predominate the most (27.70%). The C.D. Block has an overall undernutrition prevalence of 82.43, with male children accounting for 82.35 percent and female children accounting for 82.5 percent (Mandal & Ghosh, 2019). These numbers show that a child's prenatal and postnatal nutrition supply was insufficient. The report provides information

on the current state of Arrah children's nutrition as well as the Purulia district's circumstances in relation to MDGs and SDGs.

The malnutrition of children in the Malda district of West Bengal is highlighted in a study by Rayhan SK, Anuradha Banerjee, and MD Juel Rana (2021) titled "Nutritional status and concomitant factors of stunting among pre-school children in Malda, India." In every state in India in 2017, malnutrition was the leading cause of death for children under five years old. India leads the world in children who are stunted, which is concerning because the government of India has undertaken a number of flagship projects and schemes. This was noted in the most recent edition of the Global Nutrition Report 2018. Therefore, a micro-level study was created to determine the nutritional status and investigate it at different levels of disaggregation in addition to looking at the risk factors for stunting among pre-school children aged 36–59 months in Malda. In the research area, 40% of preschool-aged children (36–59 months) have stunting, which is a very high prevalence based on the WHO's cut-off values ($\geq 40\%$) for public health. The Malda district has a very high prevalence of stunting if the WHO's cut-off value of 40% is applied. This includes several categories of background characteristics of children, such as female children, 3+ birth order, <36 birth intervals, low birth weight, <25 months of breastfeeding duration, >25 years of mother's age at birth, illiterate or poorly educated mothers, mothers' occupation as agricultural workers or manual labourers and bidi workers, children attending AWCs, children belonging to Muslim or other minor religious groups, children in the OBC and ST categories, and so on.

The multilevel analysis's findings showed that the only characteristics linked to stunting risk in this study were the mother's age at delivery, her occupation, her previous birth interval, low birth weight, and the length of her nursing (Rayhan, S.K. et al, 2021). Stunting is most strongly predicted by low birth weight, which is followed by the mothers' age at birth and occupation. An additional significant risk factor for stunting is the mother's age at birth, since children of older mothers have a larger chance of stunting than their younger peers. Another Indian study also finds a similar correlation. Another significant risk factor for stunting in this study is the length of breastfeeding. Stunted children are more likely to have had less time to breastfeed than those who have had more time.

Even though the impact of the ICDS programs, which are administered through AWCs, is not a significant contributor to stunting when household characteristics and residence are taken into account, it does have a positive correlation with stunting in the event that children are using the services, and the regression analysis only takes the mother's characteristics into account. Similarly, the similar finding is noted with the mother's line of employment, particularly for manual labourers or agricultural workers. The multicollinearity of mother's employment, children utilizing ICDS services, and household and community variables such as religion, caste, wealth level, and residence may account for the variation in the impact of mother's occupation and ICDS programs (Pinto Silva, V. G., & Pinto Silva, S. G. 2015)

The current study (Rayhan, S.K.et al, 2021) aims to investigate the nutritional status of preschoolers in Malda, specifically focusing on risk factors for stunting and breaking down the data by level of study. As a result, in 2018 a main field survey was carried out to investigate the same. It was discovered that a high prevalence of stunting in children plagues the Malda district. The policy-making body has already given this district priority, and in an effort to end malnutrition in this district, the Indian government launched the National Nutrition Mission (NNM) in its first phase from 2017 to 2018.

Prior to that, the Indian government launched and is still running another flagship program called ICDS in the 1990s. Still, the rate of stunting in children is concerningly high. If the target of "Mission 25 by 2022" for stunting is still not met, then all public health apparatus, from the local governing body to the State Government and Central Government, is asked to keep an eye on the implementation process and program efficacy. Additionally, since this study has shown that prior birth interval, low birth weight, length of breastfeeding, mother's education, and occupation are linked risk factors of stunting in this population, special attention needs to be paid to the modifiable risk factors of child stunting.

Wagh, Sanjay V., and others (October 2019) in their study focused on the nutritional status and factors influencing it in the Barshi Takali area of Akola, Maharashtra, India, for children aged 0 to 5. One of the leading causes of sickness and mortality among children in India, malnutrition is a silent emergency. Children who are underweight are found throughout India. This study aims

to determine the sociodemographic factors associated with underweight status in children aged 0 to 5 in rural Maharashtra.

An individual's nutritional status is typically the consequence of a number of variables interacting with one another at various degrees. For the sake of public health, it is critical to acknowledge the role that diet plays in the development of numerous diseases and to evaluate the nutritional condition of each individual, family, and community. The purpose of the nutritional assessment is to gather data regarding the geographic distribution and prevalence of nutritional diseases within a given population group or within a community.

Children under the age of five from the rural health training center (RHTC) in the Barshi Takali district of Akola, which serves as the community medicine department's field practice area under Government Medical College Akola, participated in the study. There were 16042 people living in the area overall. The study was carried out between April and August of 2019. The children in the study were all under five years old. A total of 282 mothers whose children were younger than five years old were present for the vaccination. When a child is underweight, malnutrition is deemed to have occurred. In total, 59 people (20.99%) in the research were malnourished. Of the 281 children, 147 (52.3%) were found to be male and 134 (47.7%) to be female. A maximum of 70 (24.9%) people fall into the 24- to 35-month age range. The largest group, 186 (66.2%), was Hindu, followed by the Muslim community, 81 (28.8). In the study, the majority of fathers—171 (60.9%)—had labouring jobs; however, 254 (90.4%) of the mothers had non-labouring jobs. The majority of moms, 105 (37.4%), had only completed secondary school, compared to 95 (33.8%) fathers who had only completed high school.

India's remarkable economic growth over the last two to three decades presents a rare chance to enhance the health and nutritional quality of its people. In the last 20 years, there have been notable advancements in several health metrics, such as the fertility rate and infant mortality rate, although the state of nutrition has improved less dramatically. Among the significant socioeconomic determinants of health is - nutrition.

The state of Maharashtra has significantly decreased both the baby and maternal death rates in the past few years. The state's economy is growing significantly as well. The state hasn't been able to significantly improve the nutritional status of children, though, in spite of this background. It attempted to explain malnutrition in the study by examining underweight and its relationship to socio-demographic variables. In the study, Purohit et al. (2017) recorded that 38% were underweight whereas Senthil Kumar et al. (2018) did note a 41.3% underweight. In their study, Meshram et al. (2012)found that 44% of participants were underweight. According to Yadav et al.,(2016) 43% of rural and urban Haryana residents are underweight. The state of Maharashtra has significantly decreased both the baby and maternal death rates in the past few years (Wagh, S. V.et al, 2019). The state's economy is growing significantly as well.

The study's conclusions revealed the following: Meshram et al. showed an overall 49% prevalence of underweight, with very little incidence of malnutrition. This may be because of early commencement of breastfeeding practices, exclusive breastfeeding for up to six months, and good vaccination status. The other factor could be the community's efforts to control infectious diseases through continued immunization campaigns, further nutritional intervention programs, and integrated child development services that work to enhance nutritional status. According to the study, there is a substantial correlation between undernutrition (21%), breastfeeding, diarrhea, and fathers' educational attainment. These factors are critical risk factors for undernutrition in the current study.

In March 2021, Deepak Bhal, Shalini Bassi, and colleagues conducted a study titled "The Impact of COVID-19 on Children and Adolescents" in 2021. During the COVID-19 pandemic, there were 111 million confirmed cases worldwide; 2.46 million people died from the virus. 11,005,850 million COVID-19 instances with confirmed cases and 156,418 fatalities have been reported from India. According to age stratification, the prevalence of COVID-19 was lowest in children (0–10) and adolescents, and higher in those between the ages of 21 and 30.

Global research indicates that COVID-19 infections in children and adolescents are associated with less symptoms, a lower risk of severe illness when infection occurs, and a lower risk of virus transmission than in adults. According to a US study, compared to older children and adults, children under five years old with mild to moderate COVID-19 have higher levels of SARS-CoV-2 viral RNA in their nasopharynx. Given that children and adolescents make up a

sizable section of the population in India, there is rising concern about protecting them against COVID-19 despite the country's relatively low rates and inconsistent findings (WHO, 2020).

According to a rapid comprehensive analysis that was published in the Lancet in April 2020, closing schools could cut COVID-19-related mortality by 2 to 4% on its own. India became one of the first nations in the world to close schools on March 16, 2020, and switched to online education as a last resort (Humphrey, J. H., 2009).

Young children's access to food, nutrition, and health security will undoubtedly be impacted by COVID-19. According to data, one in three children in India has stunting, underweight, or wasting as a result of malnutrition. The Comprehensive National Nutrition Survey (2016–18) found that 24% of teenagers (10–19 years old) and 23% of youngsters (5–9 years old) were underweight (BMI–for–age <–2 SD). The current COVID-19 situation may make childhood and teenage malnutrition worse. Children's nutritional condition is highly vulnerable to even the slightest changes in body weight. A child's likelihood of being underweight and wasting might rise significantly if their body weight is reduced by 0.5 to 1 percent.

According to estimates, India will see an additional 392,886 cases of wasting and 410,413 cases of underweight. According to a Lancet article on the COVID-19 pandemic's indirect consequences in low- and middle-income countries, a rise in the prevalence of wasting would be responsible for 18–23% of the extra child deaths that occur each month.

Only 43.9 percent of schoolchildren (grades 1–12) in 23 states who participated in an April 2020 survey reported having access to smartphones; another 43.9 percent reported having access to basic phones; and a noteworthy 10.0 percent reported having neither access to smart phones nor basic phones. For instance, just 50% of public school students in Maharashtra's grades I through VIII had access to digital learning. Only thirty percent of public school students used the state's online platform, DIKSHA (Digital Infrastructure for Knowledge Sharing), out of the approximately 59.8 percent that had access to smartphones with internet. Among those who are unable to access online education, 66.4 percent of households lack access to smartphones, and 72.2 percent of their parents lack the digital literacy necessary to access the state home package.

Just 0.8 percent of students had access to desktop or laptop computers. Due to their inadequate degree of digital literacy, teachers also encountered difficulties. In a report released in August 2020, the United Nations (UN) cautioned that extended school closures may lead to a higher rate of dropouts: an additional 23.8 million children and teenagers (from pre-primary to tertiary) may not be able to attend school in 2021. Girls have been shown to drop out at a higher rate than boys, especially those who are poor, disabled and live in rural areas.

Numerous causes have been highlighted by analysts as the cause of the concerning increase in domestic violence cases during the COVID-19 pandemic. These include concerns about one's health, money problems, house confinement, and limited mobility. Child Line, India's children's hotline, received 92,000 calls in 2020 alleging abuse and violence against children; in just eleven days during the shutdown, the hotline recorded one-third of these calls. Cyberbullying and other cybercrimes against minors have also increased, particularly in urban areas. According to recent studies, children's vulnerability is a result of their extensive usage of social media and the internet. There is a lot of evidence to suggest that cyberbullying negatively affects the self-esteem of both the victim and the perpetrator.

Since they are less able to completely understand situations or express their thoughts to adults, children and adolescents are more susceptible to mental health problems. Their susceptibility was increased since the pandemic interrupted their regular routines, prevented them from attending school, and thus reduced their prospects for sociability and physical activity.

RESEARCH METHODOLOGY

Rationale of the present study

The burden of malnutrition among children has not changed much even though various intervention programs are in operation in India. There is little information available regarding the factors responsible for malnutrition among the children. This study has been planned with the aim of assessing the prevalence of malnutrition and associated factors among children aged 3-5 years attending ICDS Anganwadi in the northern region.

The prevalence of malnutrition is relatively well documented, but the studies conducted do not address the main associated factors of malnutrition. Literature lacks specific studies exploring the role and importance of ICDS functionaries in nutrition of children specifically toward 3-5 years of age. Nutrition during preschool years plays an important role as a significant factor which influences growth and development, as well as future risk of diet-related diseases. During preschool years, under-nutrition causes children to have less energy and less interest in learning, which negatively influences cognitive development and academic performance. Malnutrition will also affect physical growth and maturation, thus affecting growth rate, body weight and ultimately, height. Therefore, this study has been designed to assess the prevalence of malnutrition and associated factors among children aged 3-5 years.

The present study will be helpful in providing insights into the problem of malnutrition which can then be generalized to the entire country. Based on the data provided by The Global Nutrition Report, India 2021, the present study has attempted to explore the factors associated with malnutrition among children 3-5 years of age. This study will also be helpful to adopt proper interventions for reducing the prevalence of malnutrition and to reach the global nutrition target and the target as embodied in SDGs.

Objectives:

1. To assess prevalence of malnutrition among children aged 3-5 years attending ICDS Anganwadi centres.

2. To explore the factors associated with malnutrition among children.

3. To study the challenges and noteworthy nutrition practices (both at home and at AWC) among young children.

4. To identify gaps in policies and their implementation, and to design nutritional intervention for children attending Anganwadi centres.

Research Design and Methodology:

The current research has used a mixed method approach. Johnson et al (2017) explain that mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (p. 123). Since the current study involves respondents at various hierarchy levels, a single shot design will not serve the purpose hence a mixed methods design was apt in this situation.

Locale of the study:

The present research is studying the nutritional status of the children who are attending the ICDS Anganwadi centres in the northern region of the country. The states are identified based on malnutrition indicators such as stunting, wasting and underweight. An analysis by Rai (2021) published in India Today says that "despite the progress in the last 15 years, food systems have overlooked needy children, mainly in the North Indian states of Uttar Pradesh, Bihar, and Jharkhand". Similarly, the NFHS-5 data suggests that malnutrition indicators are substantially high in the states of Jharkhand, Bihar, and Uttar Pradesh. Hence, for the purpose of the present study to be representative of the northern region the states of Jharkhand, Bihar, Uttar Pradesh, and Delhi are taken.

Next for selecting the districts within these states NFHS 5 is referred and the following states show poor malnutrition indicators, so they are chosen as the sampling frame of the study. The table below clarifies the names of districts within the identified states. The parameters for selecting the districts are based on childhood wasting, stunting and underweight children among the districts of the given states.

Name of the State	Name of the Districts	
Jharkhand	Khunti	
	West Singhabhum	
Bihar	West Champaran	
---------------	----------------	--
	Muzzafarpur	
Uttar Pradesh	Balrampur	
	Hardoi	
Delhi	Northeast	
	Northwest	

S.	Respondents	Sampling	Tool Used	Sample	total	Objectives Covered
No				Size	Sample	
				(district	Size	
				level)		
1	Mothers of	Stratified	Structured	125	1000	• factors
	children in the	random	Interview			associated
	age group of		Schedule			with
	3-5 years					malnutrition.
						• challenges
						and
						noteworthy
						nutrition
						practices
2	Anganwadi	Systematic	Structured	25	150*	• prevalence of
	Workers	random	Interview			malnutrition
			Schedule			• challenges
						and
						noteworthy
						nutrition

Table no. 1.7 Methodology Matrix

							practices
3	Supervisors	Systematic	Structured	4	24*	•	prevalence of
		random	Interview				malnutrition
			Schedule			•	challenges
							and
							noteworthy
							nutrition
							practices
						•	Designing
							nutritional
							intervention
4	CDPO	Systematic	In depth	2	6*	•	prevalence of
		random	Interview				malnutrition
						٠	challenges
							and
							noteworthy
							nutrition
							practices
						٠	Designing
							nutritional
							intervention
5	Nutritional	Purposive	In depth	20		٠	Designing
	Practitioners		interview				nutritional
							intervention
Tota	l sample size	1200					
	*ICDS Bihar refused to give the permission						
hence ICDS functionaries from Bihar state							
are not covered in the sample.							

The table below i.e. Table 1.7 methodology matrixes is explaining in a nutshell about respondents selected for the study, the type of sampling used, their corresponding sample size, tools used to collect the data from them, and objectives covered of the study.

Sampling size and sampling procedure

- From the chosen districts 2 ICDS projects were taken via systematic random sampling and within those projects 25 AWC were chosen from each project again via systematic random sampling which means a total of 50 AWC were selected for data collection from each state. From each state half AWC were from urban area and half were from rural area.
- Five children in the age group of 3-5 years were selected through stratified random sampling from each AWC and their mothers were interviewed via structured interview schedule regarding their nutritional indicators and outcomes. The criteria for selecting children were 1) regular attendance at AWC and 2) high risk / malnourished children (as marked by AWW in her register). Hence a total of 125 mothers of such children were interviewed from each district.
- The children present on the day of data collection were assessed using anthropometric measures including height, weight, head circumference and mid upper arm circumference. This data was plotted on ICMR graph to identify the most malnourished child present in the AWC.
- 25 AWC were chosen from each district via systematic random sampling which means 50 AWC were selected from every state and 50 AWW were interviewed. As ICDS Bihar refused to give permission for this project, the AWW from three states were interviewed. (50 * 3= 150) via structured interview schedule to understand the nutritional status of children and to explore the factors associated to nutritional outcomes among children.
- Further data was also collected from supervisors and CDPOs. Four supervisors and one CDPO were chosen from one district for data collection via systematic random sampling. They were interviewed specifically to understand the challenges and noteworthy practices about nutrition of young children.

- Finally, data was also collected from nutritional experts and practitioners (20) from every state who may be academicians, researchers, nutritionists, program implementers etc.
- Using multiple tools to explore in detail the relationship between nutrition, child health and nutrition outcomes and a way forward for designing nutrition programs. The data from supervisors was collected via structured interview schedule whereas CDPOs contributed to the study through in-depth interviews.

Tools of Data Collection:

There were five sets of respondents and hence five tools were prepared for the project.

- 1. The first tool was for interviewing the mothers a structured interview schedule was used. The major domains covered in the tool were socio-demographic information, health status of the child, child's growth and development, nutritional practices at home, personal hygiene, and safety practices and finally mother's perceptions on the efficacy of the nutrition practices.
- The second tool was for AWW and it was a structured interview schedule. The major domains covered were background information, facilities like water, sanitation, hygiene, nutritional status of children and perception of AWW about the available facilities and services.
- 3. The third tool was for the supervisors it was again a structured interview schedule. The major domains included background information, roles and responsibilities of a supervisor, supply and distribution of food, quality, and quantity of food in AWC, and reasons for malnutrition among children.
- 4. The fourth tool was for the CDPOs it was an in-depth interview tool.
- 5. The fifth tool was again an in-depth interview with the nutrition experts.

Process of data collection

The process of data collection started with NCT of Delhi, followed by Uttar Pradesh, Bihar and finally Jharkhand.

1. The permissions were sought from department of women and child development. Permission for the two districts from every state was sought. The team visited the district headquarters where the DPO provided a list of AWCs. The research team selected 25 AWCs -half of them urban and half rural.

Before the data collection, the research team was given online training about the project, its objectives and familiarity with the tool. As they reached the field again a one-day training was organized for them where they were again briefed about the tools and role plays were conducted on how to ask the questions, maintain sensitivity, maintain research ethics, confidentiality. Ask adequate probe questions where the respondent is not clearly giving the response. The research staff was also taught to maintain sensitivity while doing data collection. To maintain cultural sensitivity and address the language barriers, research investigators were hired from those respective states.

Finally, nutrition experts from every state were interviewed. Nutrition experts included academicians, researchers, nutritionists, program implementers etc. In-depth interviews were used to explore in detail the relationship between nutrition, child health and nutrition outcomes and a way forward for designing nutrition programs.

The Research Team did not have access to Bihar ICDS as the ICDS Poshan-Bihar refused to give permission to the research team. Despite repeated requests, they were not willing to provide permission. So, in Bihar the research team reached out to the mothers of the malnourished children who were visiting AWCs through Non-Governmental Organizations, community-based organizations, Mahila Mandal and SHG members. The sampling procedure for Bihar was started in Delhi itself where the research team selected the villages randomly from the block list of two districts and then approached the above-mentioned organizations to connect with the mothers of malnourished children at their respective households. As the research team visited the villages, the abovementioned organizations were contacted, and they were requested to contact those families whose children are enrolled in Anganwadis. Although it was a time taking exercise, the research team could meet the malnourished children and talk to their mothers. No ICDS staff i.e. AWW, Supervisor and CDPOs was interviewed in Bihar.

The process of data collection continued till early August 2023.

Data Analysis and Interpretation:

The data collected through the interview schedule was analyzed quantitatively through SPSS software and the results are analyzed descriptively. On the other hand, the data collected through CDPOs, and nutrition experts is analyzed qualitatively using thematic analysis.

Initially the frequency tables for each item of the tool were generated. The generation of frequency tables using Statistical Package for the Social Sciences (SPSS) plays a crucial role in data analysis and interpretation. These frequency tables provide a comprehensive overview of the distribution of variables within a dataset, offering researchers insights into the prevalence and distribution of various attributes or characteristics among the study participants. By organizing data into frequency tables, researchers can easily identify patterns, trends, and disparities across different groups or categories, helping to uncover underlying relationships and associations within the data. Additionally, SPSS allows for the customization of frequency tables, enabling researchers to present results in a clear and visually appealing manner, which enhances the communication of findings to stakeholders and facilitates further analysis and interpretation. Ultimately, the generation of frequency tables serves as a valuable tool in social science research, aiding researchers in understanding and making sense of complex datasets to address research questions and draw meaningful conclusions.

Next to find out associations between variables correlations were run through the data. The non-parametric correlation analysis is particularly useful when the variables of interest do not meet the assumptions required for parametric correlation tests, such as the normal distribution of data or linearity of the relationship. Non-parametric correlation methods, like Spearman correlation, are applied in situations where variables are ordinal or when the data exhibit non-linear relationships. Spearman correlation serves as a robust alternative to parametric correlation methods. By employing Spearman correlation, researchers can assess the strength and direction of monotonic relationships between

variables, providing valuable insights into the associations present in the dataset without requiring stringent assumptions about the data distribution. Therefore, Spearman correlation test was employed to find out the degree of association between the tested variables.

Report Writing:

Both the quantitative data and qualitative data are interpreted and integrated to write the report. The report comprises of 5 chapters. Chapter 1 is *Introduction* which comprises of research argument, review of literature and research methodology. Chapter 2 is *Prevalence of Malnutrition and Factors Associated with Malnutrition in North Indian States*. Chapter 3 is on *Challenges and noteworthy practices* and chapter 4 is *Gaps in policies and implementation*. *Chapter 5 Recommendations* which will be useful in designing nutritional intervention in the AWC-ICDS projects.

Challenges faced/ Limitations during data collection:

Every research project has its set of challenges which are discussed below.

- One of the most important challenges was the non-cooperation of the states at the initial stage, by delaying permissions. Getting permissions from states took a major time of the project and even then, Bihar refused permission to access their ICDS projects.
- 2. The ICDS website either did not have updated information on the website or in some states ICDS did not maintain the website so it was difficult to get information from the public domain. This increased our dependency on the State officials, so everything had to be physically asked for --- such as list of AWCs, contact number of CDPOs, Supervisors etc. There were no updated reports on the websites.
- 3. Collecting data on malnutrition from Bihar was a big challenge as the research team had to make an alternate strategy to access the mothers of the malnourished

children whom we could do by approaching Civil Society Organizations like NGOs, CBOs, Mahila Mandals etc.

4.Duration of Project: The duration of the project is 12 months and was supposed to be completed in March 2023. But then due to Post pandemic situations in the University, administrative delays and change of Principal Investigator, the project got delayed and then with a Six-month extension, the project deadline was extended to 3oth September 2023.

5.Ethical Considerations

Ethical Considerations can be specified as one of the most important parts of the research. Research ethics involve requirements on daily work, the protection of the dignity of subjects and the publication of the information in the research. The researcher tried to maintain the following ethical considerations throughout her research:

• Informed Consent: The participants were fully informed about the evaluation being conducted. The participants were made aware of purpose behind the study, benefits of the study, how the findings will be used, etc. The main purpose of informed consent was to enable the participant to make an informed decision as to whether they wish to participate in the valuation or not.

• Voluntary Participation: This implies that the respondents participated in the evaluation without any pressure or coercion. All the participants were free to withdraw from, or leave the evaluation at any point without feeling an obligation to continue. Explanations were also not required.

• No harm: The evaluation process needed not to harm (unintended or otherwise) the participants in any way.

• Relevant information: The researcher focused on asking only those questions that were relevant to the research. It is important to keep the evaluations as simple as possible and to remain focused on the intention of the evaluation, and what the data will be used for.

Chapter 2

PREVALENCE OF MALNUTRITION AND ASSOCIATED CAUSATIVE FACTORS

Content of the chapter

- Profile of Respondents
- Tables
- Causative factors
- Nutrition practices
- Familial Factors and their Impact on Nutrition
- Impact of Type of Family
- Mothers' Autonomy as a Factor for Malnutrition
- Lack of provisions at Anganwadi Centres
- Impact of Malnutrition on Child Health, Growth and Development
- Results of correlations between dependent and independent variables
- Key findings

Malnutrition is a serious condition, which occurs when the body is undernourished, or it is the absence of proper nutrition. It is a well-established fact that malnutrition has adverse effects on the body's growth, leads to stunting (less height for age), wasting (less weight for height) and undernourishment, and causes children to be underweight (too less body weight).

Acute malnutrition (AM) comprises wasting and/or nutritional oedema. Wasting is defined by low weight-for-length and/or low mid-upper arm circumference (MUAC). Acute Malnutrition is often subdivided into severe acute malnutrition (SAM) and moderate acute malnutrition (MAM). The World Health Organisation (WHO) defines 'severe acute malnutrition' (SAM) by very low weight-for-height or a mid-upper arm circumference less than 115 mm, or by the presence of nutritional edema (abnormal fluid retention in the tissues resulting especially from lack of protein in states of starvation or malnutrition).

MAM, also known as wasting, is defined by a weight-for-height indicator between -3 and -2 zscores (standard deviations) of the international standard or by a mid-upper arm circumference (MUAC) between 11 cm and 12.5 cm.

The Poshan Abhiyaan 2.0 describes SAM children are those in the red zone with a higher risk of contracting secondary infection. This category may suffer from severe illnesses. MAM children show signs of malnourishment but are in the yellow zone which means their lives are not under threat. Children suffering from SAM are nine times more likely to die in case of diseases due to their weakened immune system. In 2019, of the 47 million children under five years of age who were acutely malnourished, 32.7 million suffered from MAM.

India has one of the worst rates of child malnutrition in the world, with one third of malnourished children globally being Indian. India is ranked at the bottom of the Global Hunger Index (2022), which is determined by factors such as child stunting, wasting, and death placing India in 107th rank of 121 Countries.

According to India's National Family Health Survey (NFHS-5) from 2019-21 reported that in children below the age of five years, 35.5% were stunted, 19.3% showed wasting, and 32.1% were underweight. The most cases of SAM are in Uttar Pradesh (3, 98,359) followed by Bihar (2,79,427). Uttar Pradesh and Bihar are also home to the highest number of children in the country.

The National Family Health Survey 5 (NFHS 5) further reveals that thirty-six percent of children under age five years are stunted; 19 percent are wasted; 32 percent are underweight; and 3 percent are overweight. Children born to mothers with no schooling and children in the lowest wealth quintile are most likely to be undernourished. A recent trend noted by Poshan Abhiyan, Ministry of Women and Child Development (2021) argues that Malnourishment in children (stunting, wasting and underweight) under 5 years has reduced as per NHFS-5 (2019-21) from 38.4% to 35.5%, 21.0% to 19.3% and 35.8% to 32.1% respectively as compared to NHFS-4 (2015-16). Malnutrition among women aged 15-49 years has also reduced from 22.9% to 18.7%.

Among the north Indian states Jharkhand followed by Bihar and Uttar Pradesh have the worst levels of malnourishment in children in the country. Incidentally, these regions also have the highest population of children, and the highest poverty rates. In India, lots of socio-economic factors play a major hand in the malnourishment levels. In general, those who are poor are at risk for under-nutrition, while those who have high socioeconomic status are relatively more likely to be over-nourished. Under nutrition is common in rural areas, mainly due to the low social and economic status of the inhabitants. Contrarily, in urban areas, overweight status and obesity are over three times as high as compared to rural areas. Hence its can be seen that income, education and rural/ urban residence are well determined factors for malnutrition. However, the present study aims to go beyond these factors and have tried to look from a sociological angle to uncover the causes of malnutrition which are rooted in nutrition practices at home, food and drinking water handling routine, hygiene practices, toilet usage and associated hygiene and overall household and community sanitation. A large section of this chapter focuses on impact of malnutrition on child health and child development outcomes.

In this chapter, the data pertaining to first and second objective i.e. Prevalence of malnutrition and its causative factors are discussed. This chapter gives data presentation from a range of participants including mothers as primary respondents (N = 1000) as well as stakeholders that include Anganwadi Workers (N = 150), Supervisors (N = 28), CDPOs (N = 6) and Nutrition Experts (N = 20). The findings in this chapter are discussed in the subheads i.e. profile of respondents, prevalence of malnutrition among children, causative factors including Nutrition Practices at Home, Hygiene practices, drinking water status and handling, sanitation practices, and lastly impact of malnutrition on health and child development outcomes.

The chapter is discussed ahead in the following sub heads.

- 1) Profile of respondents
- 2) Prevalence
- 3) Causative factors
- 4) Nutrition practices
- 5) Familial factors and their impact on nutrition
- 6) Drinking water and food related factors
- 7) Hygiene and sanitation related practices as factors affecting nutrition of children.
- 8) Mother's autonomy as a factor of malnutrition
- 9) Lack of provisions at AWCs

10)Impact of malnutrition on child health and development outcomes

I. Profile of Respondents:

This section provides a demographic and socioeconomic profile of the respondents primarily mothers of children attending AWCs. Demographic and socio-economic information on the basic characteristics of respondents interviewed in the study is essential for the interpretation of findings presented in the report and can provide an approximate indication of the representativeness. In this section age of the mother, type of house, type of family, mothers' and fathers' education, occupation and income are discussed.

Rural urban residence: De &Chattopadhyay (2019) In India, under-nutrition among the poor children imposes greater burden in rural areas. Particularly rural children are more vulnerable to malnutrition because they receive foods having low nutritional values along with discriminatory distribution of food within the household. Also, in early childhood due to lack of appropriate care they suffer from recurrent infections and multiple diseases either causing delayed development or fatal effect. The demographic and socio-economic factors influence the nutritional status and neurodevelopment of the vulnerable children.

State	Household Types	Percentage
	Kachcha/Jhuggi	1.6
Delhi	Semi Pucca	4.4
	Pucca	94.0
	Total	100.0
	Kachcha/Jhuggi	14.9
Uttar Pradesh	Semi Pucca	31.3
	Рисса	53.8
	Total	100.0
	Kachcha/Jhuggi	37.3
Bihar	Semi Pucca	53.4
	Рисса	9.2

ГАВLE 2.1:	Type of	house where	children	are residing.
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	Total	100.0
	Kachcha/Jhuggi	77.8
Jharkhand	Semi Pucca	11.1
	Рисса	11.1
	Total	100.0

Above Table 2.1 shows percentage of people living in kaccha, Pucca, semi Pucca household in Delhi, Uttar Pradesh, Bihar, and Jharkhand. Comparison among all four state it finds out people who is living in Delhi and Uttar Pradesh are having Pucca (household) as compare with Bihar and Jharkhand. There 94% people are living in Pucca houses in Delhi, Uttar Pradesh 50% people living in Pucca (household) but in Bihar and Jharkhand there is worst condition, Bihar only 9.2 people living in Pucca (household type) and in Jharkhand 11.1% people in living Pucca (household type) there is 37 % in Bihar and 77% in Jharkhand people living Kaccha/Jhuggi type houses.

State	Type of Family	Percentage
Delhi	Nuclear	66.8
	Joint	28.0
	Extended	5.2
	Total	100.0
	Nuclear	63.5
Uttar Pradesh	Joint	34.9
	Extended	1.6
	Total	100.0
Bihar	Nuclear	72.3
	Joint	25.7
	Extended	2.0
	Total	100.0
	Nuclear	66.7
Jharkhand	Joint	31.7
	Extended	1.6
	Total	100.0

Table 2.2 Type of Family

Table 2.2 shows percentage of people living Nuclear, Joint, and extended family in Delhi, Uttar Pradesh, Bihar, and Jharkhand. Comparison among all four state it finds out people nuclear family system in high in Delhi 66.8%, Uttar Pradesh 63.5%, Bihar 72.3% and Jharkhand 66.7%

people are living in nuclear family system. Joint and Extended family system among all four state is less as compared to nuclear family system there are only 28% in Delhi, 34% in UP, 25.7% in Bihar and 31.7% in Jharkhand living in Joint family system. Same as only 5.2% in Delhi, 1.6% in UP, 2% in Bihar and 1.6% in Jharkhand people are living in Extended family system. Result shows that Joint and extended family system are very less as compare with nuclear family system.

State	Religion	Frequency	Percentage
	Hinduism	191	76.4
	Islam	59	23.6
	Christianity	0	0.0
Delhi	Sikhism	0	0.0
	Jainism	0	0.0
	Buddhism	0	0.0
	99	0	0.0
	Total	250	100.0
	Hinduism	180	72.0
	Islam	67	26.8
	Christianity	2	0.8
Uttar Pradesh	Sikhism	1	0.4
	Jainism	0	0.0
	Buddhism	0	0.0
	99	0	0.0
	Total	250	100.0
	Hinduism	205	82
	Islam	42.5	17
	Christianity	1.5	0.6
Bihar	Sikhism	1	0.4
	Jainism	0	0.0
	Buddhism	0	0.0
	99	0	0.0
	Total	250	100
	Hinduism	170	68
	Islam	40	16
	Christianity	16	6.4
	Sikhism	4	1.6
Jharkhand	Jainism	2	0.8
	Buddhism	1	0.4
	99	17	6.8
	Total	250	100

TABLE 2.3 Religion of the Respondents

Table 2.3 shows the percentage of religions followed by the population of four northern states of India namely Delhi, Uttar Pradesh, Bihar, and Jharkhand. Upon comparing the data of all respective states, it displays that Hinduism is the predominant religion among all the states. Bihar leads with 82 % of Hinduism religion followed by Delhi, Uttar Pradesh, and Jharkhand with percentage of 76.4 %, 72% and 50% respectively. The data also shows that Islam is the 2nd followed religion among these states with highest number percentage in Uttar Pradesh at 26 On the other hand, Christianity and Sikhism are the least followed religion among all these states, with highest percentage of 6.4% of Christianity in Jharkhand and Sikhism being limited to Bihar with just 0.4%. Notably, Jharkhand stands out as the only state where other religions are followed, accounting for 34% of the population.

State	Household Income	Percentage
	(Range)	
Delhi	2001 to 4000	8.0
	4000 to 6000	4.0
	6001 to 8000	8.4
	8001 to 10000	14.0
	10001 to 12500	24.8
	12501 to 15000	16.0
	15000 (above)	20.8
	Does not know	4.0
	Total	100.0
Uttar Pradesh	2001 to 4000	30.1
	4000 to 6000	24.5
	6001 to 8000	18.9
	8001 to 10000	12.0
	10001 to 12500	9.2
	12501 to 15000	2.8
	15000 (above)	2.4
	Does not know	0.0

TABLE 2.4 Income of the Respondents

	Total	100.0
Bihar	2001 to 4000	1.6
	4000 to 6000	12.0
	6001 to 8000	35.3
	8001 to 10000	24.1
	10001 to 12500	14.1
	12501 to 15000	4.0
	15000 (above)	8.8
	Does not know	0.0
	Total	100.0
	2001 to 4000	22.6
	4000 to 6000	11.5
	6001 to 8000	38.9
Jharkhand	8001 to 10000	16.3
	10001 to 12500	6.0
	12501 to 15000	1.2
	15000 (above)	1.6
	Does not Know	2.0
	Total	100.0

TABLE 2.5: Status of BPL Card

State	BPL Card	Frequency	Percentage
Delhi	Blank / No Response	93	37.2
	BPL	38	15.2
	APL	42	16.8
	Any other	77	30.8
	Total	250	100.0
Uttar Pradesh	Blank / No Response	15	6.0

	BPL	95	38.0
	APL	111	44.4
	Any other	29	11.6
	Total	250	100.0
Bihar	Blank / No Response	41	16.4
	BPL	140	56.0
	APL	53	21.2
	Any Other	16	6.4
	Total	250	100.0
	Blank / No Response	20	8.0
Jharkhand	BPL	200	80.0
	APL	20	8.0
	Any Other	10	4.0
	Total	250	100.0

Table 2.5 presents the responses from family populations regarding the availability of Below Poverty Line cards, represented as a percentage, from four states: Delhi, Bihar, Uttar Pradesh, and Jharkhand. On analyzing the data from these states, it is evident that Jharkhand takes the lead, with 80% of families approves for having Below Poverty Line cards, followed by Bihar, Uttar Pradesh, and Delhi with percentage of 56, 38 and 15.2 respectively. Regarding the availability of APL cards among these states, UP has the highest percentage of APL cards with 44.4%, followed by Bihar, Delhi, and Jharkhand respectively. Notably, a portion of family population opts for "Can't say anything" response, where Delhi holds the highest percentage of 37.2 for this response, followed by Bihar, Jharkhand& UP with a percentage of 16.4, 8 and 6 respectively.

Gender of the child: Table 2.6 represents the distribution of the respondent population by sex within the four states namely Delhi, Bihar, Uttar Pradesh, and Jharkhand and represented in percentage. Upon interpreting the data from all these states, the data showcases that the male population is highest in Bihar with a percentage of 54%, while it is lowest in Uttar Pradesh comprises 47.2% of the population. Conversely, when analyzing the female population among

these states, Uttar Pradesh takes the lead with a percentage of 52.8%, whereas Bihar has the lowest percentage of females at 46%.

State	Sex	Frequency	Percentage
Delhi	Male	127	50.8
	Female	123	49.2
	Total	250	100.0
	Male	118	47.2
Uttar Pradesh	Female	132	52.8
	Total	250	100.0
Bihar	Male	135	54.0
	Female	115	46.0
	Total	250	100.0
	Male	124	49.6
Jharkhand	Female	126	50.4
	Total	250	100.0

 TABLE 2.6: Gender of the Child Attending AWC

TABLE 2.7: Mothers' Education Status

State	Mother Education	Frequency	Percentage
Delhi	Literate	157	62.8
	Illiterate	93	37.2
	Total	250	100.0
Uttar Pradesh	Literate	96	38.4
	Illiterate	154	61.6
	Total	250	100
Bihar	Literate	81	32.4
	Illiterate	169	67.6
	Total	250	100
Jharkhand	Literate	148	58.8

Illiterate	102	41.2
Total	250	100

Table 2.7 reflects the education status of the mothers within the same population from four states namely Delhi, Bihar, Uttar Pradesh, and Jharkhand, represented in percentages. After comparing the data from all these states, it becomes evident from the data that Delhi holds first position where 57.2 % of mothers are with education indicating a relatively higher percentage of educated mothers. However, it is followed by Jharkhand, UP and Bihar with percentage of 41.2, 34&20.8 respectively. On the other hand, some respondents didn't opt "can't say anything" option, where Jharkhand counts highest percentage at 17.6% and lowest in UP at 4.4%.

State	Father Education	Frequency	Percentage
Delhi	Literate	166	66.4
	Illiterate	84	33.6
	Total	250	100
Uttar Pradesh	Literate	133	53.2
	Illiterate	117	46.8
	Total	250	100
Bihar	Literate	99	39.6
	Illiterate	151	60.4
	Total	250	100
Jharkhand	Literate	150	55
	Illiterate	100	45
	Total	250	100

TABLE 2.8: Fathers' Education Status

Table 2.8 reflects the education status of fathers within the same population from 4 states Delhi, Bihar, Jharkhand, and Uttar Pradesh and represented in percentages. While analyzing all the data

across these four states, it is evident from the analysis that Delhi leads the way with 66.4% of fathers having education, indicating a relatively higher percentage of educated fathers. In contrast, Bihar has the lowest percentage of educated fathers at 27.2%. Additionally, some respondents opted for the "Can't say anything" response. Jharkhand recorded 12.8% of such responses, while Bihar had 12.4%.

Mother's occupation: Table 2.9 displays the occupations of mothers within the same population across four states: Delhi, Bihar, Uttar Pradesh, and Jharkhand. A comparison of the data from these states reveals that across all four states, most mothers are identified as housewives, with Jharkhand having the highest percentage at 94.4% and Delhi the lowest at 54%. In contrast, the percentage of working mothers is highest in Jharkhand at 17.2%, followed by Delhi, Uttar Pradesh, and Bihar with percentages of 3.2%, 2%, and 0.8%, respectively.

State	Mother Occupation	Frequency	Percentage
Delhi	Blank / No Response	17	6.8
	Housewife	225	90.0
	Working	8	3.2
	Total	250	100.0
Uttar Pradesh	Blank / No Response	12	4.8
	Housewife	233	93.2
	Working	5	2.0
	Total	250	100.0
Bihar	Blank / No Response	12	4.8
	Housewife	236	94.4
	Working	2	0.8
	Total	250	100.0

TABLE 2.9: Mother's Occupation

Jharkhand	Blank / No Response	70	28.0
	Housewife	137	54.8
	Working	43	17.2
	Total	250	100.0

Additionally, a portion of the respondents selected the "Can't say anything" option. Jharkhand recorded the highest percentage at 28%, while Bihar and Uttar Pradesh both had the lowest percentage at 4.8%.

State	Father Occupation	Frequency	Percentage
Delhi	No Response	17	6.8
	Not Working	0	0.0
	Working	233	93.2
	Total	250	100.0
Uttar Pradesh	No Response	4	1.6
	Not Working	0	0.0
	Working	246	98.4
	Total	250	100.0
Bihar	No Response	10	4.0
	Not Working	0	0.0
	Working	240	96.0
	Total	250	100.0
	No Response	10	4.0
Jharkhand	Not Working	0	0.0
	Working	240	96.0
	Total	250	100.0

 TABLE 2.10 Fathers' Occupation

Table 2.10 refers to the percentage of fathers' occupation within the same population from 4 states Delhi, Bihar, Jharkhand, and Uttar Pradesh. Most fathers in these states are employed, with the highest percentage in Uttar Pradesh at 98.4%, indicating a strong presence of working fathers. Delhi has the lowest percentage of working fathers at 93.2%, still representing a substantial majority of fathers in the workforce. Interestingly, the percentage of non-working fathers is zero in all states, indicating that most fathers are employed.

However, a minor percentage of respondents chose the "can't say anything" option, with Delhi having the highest percentage at 6.8%.

II. Prevalence:

In this section, the incidence and trends of child malnutrition found in the study are reported. The supervisors of AWC reported about the prevalence of malnutrition which is summated in the table ahead. When probes about the total strength of children registered at AWCs under their supervision. Their responses are given below.

TABLE: 2.11	Total strength of	children registered at	AWCs under supervisor
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State	Response	es			Frequency	Percent
Delhi	Total	strength	of	1344	1	20.0
	children	registered	at	1550	1	20.0
	AWCs			1750	1	20.0
				1850	1	20.0
				1632	1	20.0
				Total	5	100.0
UP	Total	strength	of	1433	1	12.5
	children	registered	at	1000	1	12.5
	AWCs			1600	1	12.5
				1800	1	12.5
				1350	1	12.5

			1963.0	1	12.5
			2026.0	1	12.5
			3939.0	1	12.5
			Total	8	100.0
Jharkhand	Total strength	of	1766	1	12.5
	children registered	at	1340	1	12.5
	AWCs		1877	1	12.5
			850.0	1	12.5
			2544	1	12.5
			1102.0	1	12.5
			1743.0	1	12.5
			2372.0	1	12.5
			Total	8	100.0

Please note: no information available from Bihar ICDS

Above Table 2.11 shows that the total strength of registered children in the Anganwadi centres under supervisor among states, the average strength of children in under each supervisor is 1000 to 2000 it was shows that there is a smaller number of supervisors in all states. After discussion with all state's supervisor, they said at least seven supervisor need in each district but presently only three to four supervisor are working it was going burden on supervisor.

THE BEE Contraction of the suffering from manual from at the contract of the suffering from manual from the suffering the suffer	TABLE: 2.12	Children registered	who are suffering	from malnutrition a	at AWCs
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State	Responses		Frequen	Perce
			cy	nt
Delhi	Children registered who are suffering	0	4	80.0
	from malnutrition at AWCs	Few Children	1	20.0
		Total	5	100.0

UP	Children registered who are suffering	0	1	12.5
	from malnutrition at AWCs	115	1	12.5
		138	1	12.5
		147	1	12.5
		151	1	12.5
		32	1	12.5
		55	1	12.5
		63	1	12.5
		Total	8	100.0
Jharkhand	Children registered who are suffering	11	1	12.5
	from malnutrition at AWCs	20	1	12.5
		250	1	12.5
		29	1	12.5
		338	1	12.5
		35	1	12.5
		350	2	25.0
		Total	8	100.0

Please note: no information available from Bihar ICDS

Above table 2.12 shows that children registered under supervisor who are suffering from malnutrition, data indicate Bihar & Jharkhand having most malnourished children as compared to UP & Delhi because the AWCs not having continuity of raw food in the centres and there is gaps between the essential requirement of foods. Malnourished children divided into Red Zone (Severe category malnourishment), Yellow Zone (Moderate), Green Zone (Normal & mild) in all states.

State	Responses	Frequency	Percent
Delhi	Health card not available	69	27.6
	Normal	174	69.6

TABLE: 2.13 The health status of the child

	Mild Malnutrition	4	1.6
	Moderate malnutrition	2	.8
	Severe malnutrition	1	.4
	Total	250	100.0
Uttar	Health card not available	17	6.8
Pradesh	Normal	23	9.2
	Mild Malnutrition	115	46.0
	Moderate malnutrition	71	28.4
	Severe malnutrition	24	9.6
	Total	250	100.0
Bihar	Health card not available	103	41.2
	Normal	47	18.8
	Mild Malnutrition	67	26.8
	Moderate malnutrition	26	10.4
	Severe malnutrition	7	2.8
	Total	250	100.0
Jharkhand	Health card not available	39	15.6
	Normal	64	25.6
	Mild Malnutrition	99	39.6
	Moderate malnutrition	46	18.4
	Severe malnutrition	2	.8
	Total	250	100.0

Next the mothers were also investigated about the health status of the child, which was noted as per the record of health card (MCP card). The findings in the table below suggest that the greatest number of "children in the normal category" is found in Delhi and very less children are found in malnutrition category whereas UP shows the highest number of malnourished children with 46.0% mild, 28.4% moderate and 9.6% severe malnourished children. The incidence of malnutrition is quite prevalent in Jharkhand with 39.6% mild and 18.4% moderate malnourished children. In Bihar the situation is that 26.8% are mild and 10.4% moderate malnourished. Also,

in Bihar 41% mothers didn't have health card at home and AWW were not interviewed so data is incomplete to explain.

III. Causative factors:

Saunders and Smith (2010) explain that malnutrition is a common, under-recognized and undertreated problem facing patients and clinicians. It is both a cause and consequence of disease and exists in institutional care and the community. The most established cause of malnutrition is poverty, inequality and food shortage but in the present study an attempt is made to understand the factors which are playing at home, under nutrition due to low awareness at home and drinking water and food related factors. The study goes beyond the traditional approach to explore hygiene and sanitation related practices, mother's autonomy and even lack of provisions at AWCs as a factor of malnutrition.



Source: Black MM, Lutter CK, Trude ACB. All children surviving and thriving: Re-envisioning UNICEF's conceptual framework of malnutrition. Lancet Glob Heal. 2020;8(6):e766–e777. https://doi.org/10.1016/S2214-109X(20)30122-4

The picture above gives a comprehensive view of the causative factors associated with malnutrition. In the chapter ahead those factors that are directly associated with child malnutrition are discussed. In the present study Nutrition Experts, Child Development Project Officers and Supervisors were interviewed and they have spoken about a variety of causative factors of malnutrition among young children, which is discussed ahead.

a) Views of Supervisors:

Next when supervisors were probed about the causative factors of malnutrition then their responses are summated in the table below.

State	Responses	Frequency	Percentage
Delhi	Income	2	40.0
	Education status of parents	1	20.0
	Quality of food,	1	20.0
	Rural residence	1	20.0
	Total	5	100.0
Uttar	Can't Say Anything	1	12.5
Pradesh	Family Size	5	62.5
	Income	2	25.0
	Total	8	100.0
Jharkhand	Family Size	5	62.5
	Income	3	37.5
	Total	8	100.0

TABLE: 2.14 Factors associated with malnutrition in children

Please note: no information available from Bihar ICDS

The above table 2.14 data states that in Delhi 40% of income is associated with malnutrition in children, 20% of the education of parents is associated with malnutrition in children, 20% of the quality of food is associated with malnutrition in children, 20% of residential which is rural/urban associated with malnutrition of children. While in UP 25% of income is associated with malnutrition in children, 62.5% of malnutrition in children is associated with family size and 12.5% can't specify malnutrition in children. In Jharkhand, 62.5% of family size is associated with malnutrition in children and 37.5% of income is associated with malnutrition in children.

b) View of Child Development Project officer:

The CDPOs believed lack of awareness about the nutritional food is the most common factor for malnutrition. Other reasons which are equally important are that parents migrate from one place to another in search of opportunities and hence do not have enough resources for feeding balanced diet to their children. Early marriage and lack of awareness about the symptoms of malnourishment also add as factors contributing to malnutrition.

Majority of the CDPOs were of the view that rural areas lack facilities as compared to urban areas; hence children living in urban areas have a tough life. Parents also have less livelihood opportunities, there is more rural to urban migration and rural parents have less knowledge about nutritional food because of lack of exposure. Due to all these factors rural children need more energetic food as there is more physical activity in the rural areas and family has limited resources to provide nutrition rich food to the child. Few of the CDPOs opined that both urban and rural children need equal diet in terms of quantity as well as quality.

c) Nutrition Experts:

The nutrition experts from all four states have identified some of the common factors which contribute to the malnourishment among children. These factors can be classified into structural factors, institutional factors, cultural factors and family level factors. The structural factors include poverty, unemployment or underemployment resulting into low family income and lowered quality of life and finally illiteracy which also results into lack of awareness about the diet and supplementary nutrition. The institutional factors are regarding the AWCs where proper diet and nutrition is not provided to the malnourished children and lack of awareness of child

rights like right to education, right to food, protection against sexual abuse etc. are also responsible for malnutrition. Cultural factors are urban and rural diet requirements, working parents' especially working mother affecting malnutrition as she is not able to pay attention to the child's diet, gap between first and second child, and size of the family –malnutrition more visible in big size families. Finally, the family level factors such as nuclear family system, family environment in terms of hygiene in terms of hygiene and cleanliness and complementary feeding are responsible for malnutrition.

IV. Nutrition practices:

Child malnutrition is a grave issue concerning children in India. Good nutrition for children is essential to achieve their full developmental potential. Insufficient quantity of food, lack of dietary diversity, poor quality of food and unsafe food handling practices may further build up malnutrition. Many Indian families rely heavily on carbohydrate-rich diets while lacking access to diverse and nutritious foods, including fruits, vegetables, and proteins ending up in children being deficient in nutrients or even malnourished.

To explore this angle further the present study probed on breastfeeding, weaning/ introduction of semi-solid foods, variety in food generally taken at home and at AWC, effect of junk food on children and effect of watching mobile while eating etc. the data is presented below.

a) Breastfeeding:

Breastfeeding is one of the most effective ways to ensure child health and survival. Breast milk is the ideal food for infants. It is safe, clean and contains antibodies which help protect against many common childhood illnesses.

Breast milk provides all the energy and nutrients that the infant needs for the first months of life, and it continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one third during the second year of life. Breastfed children perform better on intelligence tests, are less likely to be overweight or obese and less prone to diabetes later in life. Also, women who breastfeed, have a reduced risk of breast and ovarian cancers.

TABLE: 2.15 Breastfeeding of the child

State	Responses	Frequency	Percentage
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Delhi	No	19	7.6
	Yes	231	92.4
	Total	250	1000
UP	No	8	3.2
	Yes	242	96.8
	Total	250	100.0
Bihar	No	17	6.8
	Yes	233	93.2
	Total	250	100.0
Jharkhand	No	13	5.2
	Yes	237	94.8
	Total	250	100.0

Table 2.15 displays the percentage of mothers, who breastfeed their child in the states of Delhi, Bihar, UP &Jharkhand. Upon comparison of data across all these states, it is observed that majority of mothers in all states breastfeed their child, where UP leads the category with a percentage of 96.8%. Delhi stands at last with a percentage of 92.4%.

State	Responses	Frequency	Percentage
Delhi	No	42	16.8
	Yes	208	83.2
	Total	250	100.0
UP	No	43	17.2
	Yes	207	82.8
	Total	250	100.0
Bihar	No	51	20.4
	Yes	199	79.6
	Total	250	100.0

TABLE: 2.16 Breastfeeding the child within one hour of the birth

Jharkhand	No	73	29.2
	Yes	177	70.8
	Total	250	100.0

The table 2.16 shows the data percentage of mothers who breastfeed their child within 1 hour of the birth, and responses were collected from four states namely Delhi, Bihar, Jharkhand and UP. After analyzing the data across these states, it is evident that majority of mothers breastfeed their child within the first hour of the birth, and Delhi contributes majorly with a percentage of 83.8%, while it was lowest in Jharkhand with a 70.8%.

State	Responses	Frequency	Percentage
Delhi	Blank / No Response	237	94.8
	Sedated due to Caesarean	4	1.6
	No lactation advice was provided	0	0.0
	Purposively given formula milk	3	1.2
	as it provided better nourishment		
	Milk Supply did not start in the	0	0.0
	initial days		
	Any other	6	2.4
	Total	250	100.0
UP	Blank / No Response	219	87.6
	Sedated due to Caesarean	21	8.4
	No lactation advice was provided	2	0.8
	Purposively given formula milk	2	0.8
	as it provides better nourishment		
	Milk Supply did not start in the	0	0.0
	initial days		
	Any other	6	2.4

TABLE: 2.17 Reasons for not breastfeeding the child within one hour of the birth

	Total	250	100.0
Bihar	Blank / No Response	225	90.0
	Sedated due to Caesarean	7	2.8
	No lactation advice was provided	4	1.6
	Purposively given formula milk	13	5.2
	as it provides better nourishment		
	Milk Supply did not start in the	0	0.0
	initial days		
	Any other	1	0.4
	Total	250	100.0
Jharkhand	Blank / No Response	194	77.6
	Sedated due to Caesarean	37	14.8
	No lactation advice was provided	7	2.8
	Purposively given formula milk	8	3.2
	as it provides better nourishment		
	Milk Supply did not start in the	0	0.0
	initial days		
	Any other	4	1.6
	Total	250	100.0

Table 2.17 above shows the reasons of mothers for not breastfeeding their child within one hour of the birth, when we compare the data across all the states, it highlights that mostly mothers opted can't say option, where Delhi shares highest number with a percentage of 94.8% and lowest in Jharkhand at 77.6%.

However, some respondents share that sedation due to caesarean is one of the reasons for not breastfeeding their child within one hour of the birth. Jharkhand leads the category with a percentage of 14.2%, while it is lowest in Delhi at 1.6%.

Views of AWW on Breastfeeding: The AWWs were probed to understand about how they promote breastfeeding among their beneficiaries and general community. Their responses regarding promotion of exclusive breastfeeding are presented below.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Actively Promoted	40	80.0
	Partially Promoted	6	12.0
	Total	50	100.0
UP	cannot say	2	4.0
	Actively Promoted	44	88.0
	Partially Promoted	4	8.0
	Total	50	100.0
Jharkhand	Actively Promoted	47	92.2
	Partially Promoted	4	7.8
	Total	51	100.0

TABLE: 2.18 Views of AWW on Breastfeeding

Please note: no information available from Bihar ICDS

The table provides valuable insights into them promotion of exclusive breastfeeding up until the age of 6 months in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 80.0% of respondents reported that exclusive breastfeeding up to 6 months of age is actively promoted, with 12.0% indicating partial promotion and 8.0% unsure about the level of promotion. Turning to Uttar Pradesh (UP), an overwhelming 88.0% of respondents affirmed that exclusive breastfeeding is actively promoted, while 8.0% reported partial promotion and 4.0% were uncertain about this practice. Jharkhand demonstrated the highest commitment to promoting exclusive breastfeeding, with 92.2% of respondents indicating active promotion and only 7.8% suggesting partial promotion.

b) Weaning and Early Nutrition Among Children: Poor diets in early childhood can lead to deficiencies in essential vitamins and nutrients – such as vitamin A deficiency, which weakens children's immunity, increases their risk of blindness, and can lead to death from common childhood diseases like diarrhea.

In the current study the mothers were probed about the food options that they provided to their children in the absence of breastfeeding. Results of the data regarding what did mother's give the child to feed in the first four months if they did not breastfeed at all provided information across the four states of Delhi, Bihar, Jharkhand and UP. Upon comparison of data across all these stated, it is evident from the data that majority didn't share any opinion and chooses they can't say option. UP leads the category with a percentage of 88.8%, while it is lowest in Delhi at 69.6%. However, it is seen that some of respondents feed their child with cow milk in the first four months. In Jharkhand, the cow milk is mostly preferred for feeding of child among all these states, with a percentage of 15.2% and lowest in Bihar at 3.6%.

Regarding the age of introduction of supplementary nutrition mothers reported a variety the range of responses starting from 3 months to 9 months. The table provides valuable insights into the promotion of exclusive breastfeeding up until the age of 6 months in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 80.0% of respondents reported that exclusive breastfeeding up to 6 months of age is actively promoted, with 12.0% indicating partial promotion and 8.0% unsure about the level of promotion. Turning to Uttar Pradesh (UP), an overwhelming 88.0% of respondents affirmed that exclusive breastfeeding is actively promoted, while 8.0% reported partial promotion and 4.0% were uncertain about this practice. Jharkhand demonstrated the highest commitment to promoting exclusive breastfeeding, with 92.2% of respondents indicating active promotion and only 7.8% suggesting partial promotion.

State	Responses	Frequency	Percentage
Delhi	Blank / No Response	16	6.4
	Three month or	5	2.0
	lesser		
	Four months or	6	2.4
	lesser		

TABLE: 2.19	Weaning and	Early Nutrition	Among	Children
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	Five months or lesser	1	0.4
	Six months	70	28.0
	Seven Months	98	39.2
	Eight months	21	8.4
	Nine months	33	13.2
	Total	250	100.0
UP	Blank / No Response	11	4.4
	Three month or	13	5.2
	lesser		
	Four months or	25	10.0
	lesser		
	Five months or lesser	58	23.2
	Six months	54	21.6
	Seven Months	59	23.6
	Eight months	14	5.6
	Nine months	16	6.4
	Total	250	100.0
Bihar	Blank / No Response	11	4.4
	Three month or	8	3.2
	lesser		
	Four months or	3	1.2
	lesser		
	Five months or lesser	16	6.4
	Six months	82	32.8
	Seven Months	42	16.8
	Eight months	42	16.8
	Nine months	46	18.4
	Total	250	100.0
Jharkhand	Blank / No Response	28	11.2
	Three month or	2	0.8

	lesser		
	Four months or	4	1.6
	lesser		
	Five months or lesser	22	8.8
	Six months	104	41.6
	Seven Months	50	20.0
	Eight months	28	11.2
	Nine months	12	4.8
	Total	250	100.0

The table 2.19 above shares the information about age in which other food was introduced other than breastfeed milk to the child in the states of Delhi, Bihar, Jharkhand and UP. Upon comparison of data across all these states, it highlights that Jharkhand prefer 6 months of age where mothers introduce other food than breastfeed milk to the child with a percentage of 41.6%, while Bihar, Delhi and UP follows with a percentage of 32.8%, 28% and 21.6% respectively. However, for seven months of age, Delhi leads the category with a percentage of 39.2%, while it is lowest in Bihar with percentage 16.8%.

Results of the data regarding the percentage of mothers who introduced foods other than breast milk to the child after age 6 in the states of Delhi, Jharkhand, Bihar and UP indicated that mothers of majorly prefer cow milk, plain water, honey, water of cooked pulses or rice, biscuits/rusk and Khichdi other than breastfeed milk for their child with varying percentages across the states.

Upon comparison of data from all these states, it indicates that mothers of Delhi predominately didn't prefer sugar water, powder milk, juice, readymade baby food, mashed fruits like banana or boiled apple, Chapatti dipped in tea other than breastfeed milk after age 6 for their child with varying percentages.

The percentage of mothers who introduce Khichdi to the child as a supplementary food indicates that mothers predominately prefer to introduce Khichdi other than breastfeed milk for their child
among all states with a highest percentage of 82.4% from both Delhi and Bihar followed by Jharkhand and UP follow with a percentage of 69.2% and 61.6% respectively.

Upon comparison of data from all these states, it indicates that mothers of Delhi predominately didn't prefer sugar water other than breastfeed milk for their child with a highest percentage among all states i.e. 74.8%. Contrary, mothers of Bihar show a highest percentage, 58.4%, indicating that they prefer sugar water other than breast milk for their child.

Upon comparison of data from all these states, it indicates that mothers of UP predominately prefer Plain water other than breastfeed milk for their child with a highest percentage among all states i.e. 82.4%. Contrary, mothers in Jharkhand shows the highest percentage, 60%, indicating that they didn't prefer plain water other than breast milk for their child.

The data indicates that mothers in Bihar and Jharkhand predominately introduce honey other than breastfeed milk for their child with a highest percentage among all states i.e. 82.8% and 82.4% respectively. Contrary, mothers in Delhi and UP shows the highest percentage, 58.4% and 56.8 respectively, indicating that they didn't introduce honey other than breast milk for their child.

Upon analyzing data from all these states, it indicates that mothers predominately didn't prefer to introduce powder milk other than breastfeed milk for their child among all states with a highest percentage from Delhi of 82.8% followed by Jharkhand, Bihar and UP with a percentage of 80.4%, 78.8% and 74% respectively.

Upon analyzing data from all these states, it indicates that mothers predominately didn't prefer to introduce juice other than breastfeed milk for their child among all states with a highest percentage from Jharkhand of 93.6% followed by Bihar, UP and Delhi with a percentage of 86.4%, 86% and 54% respectively.

Upon comparison of data from all these states, it showcases that mothers predominately prefer to introduce Biscuit and Rusk other than breastfeed milk for their child among all states with a highest percentage of 82.4% from UP. Bihar, Delhi, and Jharkhand follow with a percentage of 75.2%, 60.4% and 59.2% respectively. Upon analyzing data from all these states, it indicates that mothers predominately prefer to introduce Water of Cooked Pulses and rice other than breastfeed

milk for their child among all states with a highest percentage from Delhi of 76.4%., UP, Jharkhand and Bihar follow with a percentage of 68.8%, 66.4% and 62.4% respectively.

Upon analysing data from all these states, it indicates that mothers predominately didn't prefer to introduce Readymade Baby food other than breastfeed milk for their child among all states with a highest percentage from UP of 90.8%. Bihar, Jharkhand and Delhi follow with a percentage of 88.8%, 84% and 77.2% respectively. Upon comparing data from all these states, it indicates that mothers in Bihar didn't prefer to introduce Mashed fruits other than breastfeed milk for their child with a highest percentage of 76.4%., Jharkhand, UP and Delhi follow with a percentage of 64.4%, 49.2% and 48.8% respectively. Upon analyzing data from all these states, it indicates that mothers majorly didn't prefer to introduce Chapatti dipped in tea other than breastfeed milk for their child among all states with a highest percentage of 73.2% from Bihar while Jharkhand, Delhi and UP follow with a percentage of 60%, 59.2% and 54.8% respectively.

c) Daily nutrition of children in the age of 3-5 years:

State	What the child has	Category	Frequency	Percentage
	eaten in the 24 hours			
Delhi	24 hours recall	1.Energy giving food		60
	method		150	
		2 Body building food	70	28
		3 Protective food	30	12
		Total	250	100
UP	24 hours recall	1.Energy giving food	170	68
	method	2 Body building food	50	20
		3 Protective food	30	12
		Total	250	100
Bihar	24 hours recall	1.Energy giving food	210	84
	method	2 Body building food	20	8
		3 Protective food	20	8
		Total	250	100

 TABLE: 2.20 Twenty fourhours recall method

Jharkhand	24 hours recal	1.Energy giving food	215	86
	method			
		2 Body building food	20	8
		3 Protective food	15	6
		Total	250	100

The mothers were investigated regarding the essential part of child's daily diet via last 24 hours recall method. The results of the data regarding the mother's opinion on foods necessary in their child's diet revealed great diversity across the four states. The results of the data analyzed are discussed below:

It is seen that children generally are taking energy giving food with Rice, Roti, millet, *dalia*, *poha*, *suji* as its major source. Next a sizeable percentage of children have access to body building food like meat, milk, and eggs whereas only a fraction of population ate protective food which include vegetables and fruits. Though intake of vegetables is commonly found but access to fruits is reported less.

The mothers of all states predominantly consider vegetables as the essential of their child's daily diet, where the Jharkhand leads the category with a percentage of 73.2. However, UP, Delhi and Bihar follow with a percentage of 72.4%, 69.2% & 53.6% respectively. The data highlights the unanimous belief among mothers in these states regarding the importance of including vegetables in their child's daily diet, with UP and Jharkhand having the highest percentage of agreement and Bihar the lowest. The mothers in Jharkhand predominately don't consider green leafy vegetables necessary in their child's daily diet with a highest percentage 76%. Contrary, the mothers in UP leads the category who consider green leafy vegetables necessary in their child's daily diet with a highest percentage from all others states i.e. 80.8%. Contrary, the mothers in UP leads the category who consider green paneer necessary in their child's daily diet with a highest percentage from all others states i.e.

The mothers in Jharkhand majorly don't consider *Flat Bread Roti* as the essential of their child's daily diet and leads the category with a percentage of 67.2%. However, Delhi, UP and Bihar

follow with a percentage of 56.4%, 54.8% & 54.8% respectively. The mothers in UP predominately consider *rice* necessary in their child's daily diet with a highest percentage from all others states i.e. 82%. Contrary, the mothers in Bihar leads the category who doesn't consider *rice* necessary in their child's daily diet with a percentage of 48.8%. The mothers in all states predominately doesn't consider *poha* necessary in their child's daily diet with a highest percentage from Bihar i.e. 94%. The mothers in Bihar majorly don't consider *Dalia* as the essential of their child's daily diet and leads the category with a percentage of 79.6% followed by Jharkhand, UP and Delhi with a percentage of 47.6%, 40.4% and 34.4% respectively.

The mothers in all states predominately don't consider Millets necessary in their child's daily diet with a highest percentage from Delhi i.e. 99.2%. Contrary, the mothers in Jharkhand leads the category who consider Millet's necessity in their child's daily diet with a percentage of 14%. The mothers in all states predominately doesn't consider ragi necessary in their child's daily diet with a highest percentage from Delhi i.e. 99.6%. Contrary, the mothers in Jharkhand leads the category who considers ragi's necessity in their child's daily diet with a percentage of 9.2%.

The mothers in all states predominately do not consider chickpea necessary in their child's daily diet with a highest percentage from Delhi i.e. 87.2%. Contrary, the mothers in Jharkhand leads the category who considers *chickpea's* necessity in their child's daily diet with a percentage of 35.6%. The mothers in all these states majorly believe *Pulses* as necessity in their child's daily diet with a highest percentage from Delhi i.e. 81.2%. Contrary, the mothers in Bihar leads the category who do not consider *Pulses'* necessity in their child's daily diet with a percentage of 35.6%. The mothers in all states majorly do not consider *Soya bean* as the essential of their child's daily diet, where Delhi leads the category with a percentage of 72%. However UP, Delhi and Jharkhand follow with a percentage of 70.4%, 59.6% and 42.4% respectively.

The mothers in all these states overwhelmingly do not believe *Jaggery* as essential in their child's daily diet with a highest percentage from Delhi i.e. 92%. Contrary, the mothers in Uttar Pradesh leads the category who believes *Jaggery* essential in their child's daily diet with a percentage of 45.6%.

The mothers in Delhi predominately believe *Seasonal fruits* as the essential of their child's daily diet, where it leads the category with a percentage of 84.4%. However, in contrast, mothers in

Bihar predominately than other states do not consider *Seasonal fruits* as the essential of their child's daily diet, with a percentage of 56.8%.

The mothers in UP predominately do not consider *Meat/fish* as the essential of their child's daily diet, where it leads the category with a percentage of 70%. However, in contrast, mothers in Jharkhand predominately than other states consider *Meat/fish* as the essential of their child's daily diet, with a percentage of 60.4%. The mothers in Jharkhand predominately consider *eggs* as the essential of their child's daily diet, where it leads the category with a percentage of 77.6%. However, in contrast, mothers in UP predominately than other states do not consider *eggs* as the essential of their child's daily diet, with a percentage of 64%.

The mothers in all states predominately do not consider *dry fruits and ghee* as the essential of their child's daily diet, where Jharkhand leads the category with a percentage of 84.4% and 85.6% respectively. Contrary, mothers in UP consider *dry fruits and ghee* as the essential of their child's daily diet, with the highest percentage of 48.4%.and 62% respectively.

Next the mothers were queried about that were they able to provide all essential nutrients to the child that they mentioned previously. The results are shown below.

State	Responses	N	Percentage
Delhi	Yes	223	89.2
	No	27	10.8
UP	Yes	79	31.6
	No	171	68.4
Bihar	yes	85	34
	no	165	66
Jharkhand	yes	76	30.4
	no	174	69.4

TABLE: 2.21 Able to provide all essential nutrients to the child

Column N of the table 2.21 represents the ability to provide all essential nutrients to their child in the states namely Delhi, Bihar, UP and Jharkhand. When the data from all the states were compared, it reflects that parents of Delhi are predominately able to provide all essential nutrients to their child with a leading percentage i.e. 89.2%. However, in the case of Bihar, Uttar Pradesh, and Jharkhand, there is an exception, as parents in these states have lower percentages, accounting for only 34%, 31.6%, and 30.4%, respectively. This data highlights the disparities in the ability of parents across these states to provide their children with all the necessary nutrients, with Delhi showing the highest level of capability, while the other states have notably lower percentages.

d) Eating of Junk Food/ readymade food:

Junk food contains high amounts of refined flour, sugar, and oil. Many nutrients are lost during the making of junk food and hence make the children deficient in nutrients. The percentage of responses for bread as a favorite junk food for the child in the states namely Delhi, Bihar, Jharkhand, and UP show that most of responses across all these states disagrees with the bread as a favorite junk for their child, where Delhi leads the category with a percentage of 96.8%. However, Jharkhand has the highest percentage for the responses who agrees for bread as a favorite junk/readymade food for the child i.e. 19.2%. Upon comparison of data across these states, it showcases that most of responses across all these states disagrees with the ice-cream as a favorite junk for their child, where Delhi leads the category with a significant percentage of 90.4%. However, Uttar Pradesh has the highest percentage for the responses who agrees for ice-cream as a favorite junk/readymade food for the child i.e. 40.8%.

Most responses across all these states disagree with the soft drink as a favorite junk for their child, where Delhi leads the category with a significant percentage of 97.2%. Notably, Jharkhand has the highest percentage for the responses who agrees for soft drink as a favorite junk food for the child i.e. 8.8%.

Upon comparison of data across these states, it is seen that Jharkhand has highest percentage for the responses who agrees that *biscuits* a favorite junk food for their child i.e. 66.4%. UP, Bihar and Delhi follow with a percentage of 64.4%, 56.4% and 46% respectively. It is seen that Delhi has highest percentage for the responses who agrees that *chips* as a favorite junk food for their child i.e. 67.2%. Conversely, Bihar leads the category who shows disagreement for *chips* as a

favorite junk food for their child with a percentage of 54.4%. The majorities of responses across all these states disagrees with the *toffee* as a favorite junk for their child, where Bihar leads the category with a percentage of 73.6%. Contrary, Delhi has the highest percentage for the responses who agrees for *toffee* as a favorite junk food for the child i.e. 30.4%. Jharkhand has highest percentage for the responses who agrees that *chocolate* as a favorite junk food for their child i.e. 52.8%. Conversely, UP leads the category who shows disagreement for *chocolate* as a favorite junk food for their child with a percentage of 67.2%.

Upon comparison of data across these states, it indicates that majority of responses across all these states disagrees with the *sweets* as a favorite junk for their child, where Delhi leads the category with a significant percentage of 96.8%. Contrary, Bihar has the highest percentage for the responses who agrees for *sweets* as a favorite junk food for the child i.e. 20.4%.

Upon comparison of data across the states, it displays that respondents in Delhi leads the category who prefer to discourage the child for having junk food by imposing strict discipline, with a percentage of 84.8%, while this preference is lowest in Bihar at a percentage of 14.8%.

Conversely, Bihar has a highest percentage where respondents prefer to discourage their child for having junk food by providing good healthy food options i.e., 68.8%, whereas Delhi stands last for this preference at a percentage of 9.6%.

e) Effect of watching mobile on eating pattern of children:

Watching TV or on the phone while eating is like putting food into a vending machine with no sensation. This habit will cause children to be distracted, causing their taste and appetite to gradually decrease, leading to anorexia, digestion issues, mindless eating, and dependent eating habit. This aspect is explored further, and the results are summated below.

State	Item	Responses	Frequency	Percentage
Delhi	child watches TV/Mobile	No	75	30.0
	phone while eating	Yes	175	70.0

TABLE: 2.22 Effect of watching mobile on eating pattern of children

		Total	250	100.0
UP	child watches TV/Mobile	No	175	70.0
	phone while	Yes	75	30.0
	eating	Total	250	100.0
Bihar	child watches	No	174	69.6
	TV/Mobile	Yes	76	30.4
	phone while eating	Total	250	100.0
Jharkhand	child watches	No	115	46.0
	TV/Mobile	Yes	135	54.0
	phone while eating	Total	250	100.0

The table 2.22 indicates the percentage of responses regarding the TV/smartphone watching habit of child while eating. The responses were from the states namely Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it highlights that Delhi has a highest percentage for the children's who are habitual to watch TV/Smartphone while eating i.e. 70%, while Bihar stands at last with a percentage of 30.4%. Contrary, UP leads the category where respondents contradict the opinion which indicates children aren't habitual of watching TV/mobile at a percentage of 70%, while it is followed by Bihar, Jharkhand, and Delhi.

Most mothers' highlights that the habit of watching TV/ mobile while eating causes the dependency of child on TV/mobile, where Delhi leads the category at a percentage of 73.6% followed by Bihar, UP and Jharkhand with a percentage of 72.4%, 69.6% and 55.6% respectively. Conversely, it is also seen that some of the respondents believe this habit has decreased their food consumption, where Jharkhand stands at highest percentage i.e. 25.6%. Notably, none of the respondents believe that the habit of watching TV or using a mobile device while eating has no impact on a child's eating behavior.

f) Meal forming habit among children:

Forming a habit requires following a routine, as children grow up, it is important that they develop and stick to consistent routines. Eating habit is one such habit that must be formed in the preschool age. Children should eat 3 meals and 2 to 3 snacks each day. Only offer water between meal and snack times. This was further asked to mothers and the responses are tabulated below.

State	Item	Responses	N	Percentage
Delhi	child eats with family and	No	32	12.8
	follow a daily routine	Yes	218	87.2
		Total	250	100.0
UP	child eats with family and	No	123	49.2
	follow a daily	Yes	127	50.8
	routine	Total	250	100.0
Bihar	child eats with	No	69	27.6
	family and	Yes	181	72.4
	follow a daily routine	Total	250	100.0
Jharkhand	child eats with	No	100	40.0
	family and	Yes	150	60.0
	follow a daily routine	Total	250	100.0

TABLE: 2.23 Meal forming habit among children

The table 2.23 above displays the percentage of responses regarding the child who eats with family and follows daily routine. The responses were collected from four states namely Delhi, UP, Bihar and Jharkhand. Upon comparison of data across the states, it shows that Delhi stands at a highest percentage i.e. 87.2%, where the child eats family and adheres to a daily routine. However, in contrast, UP leads the category where child do not eat with family and do not follow the daily routine at a percentage of 49.2%.

Regarding the nutritional practices followed in families that are believed to have no harmful effects on the child and are considered beneficial in the long run, by the mothers. Larger portion of population thinks that they are following proper nutritional practices for child which is beneficial in a long run with Delhi having a highest percentage at 67.2%. Contrary, some respondents thinks that their nutritional practices for their child are not beneficial and might have harmful effect on their child, with UP having highest Percentage at 44%. Most of the respondents believe that early nutrition leads to healthy adults, with Delhi having the highest percentage at 64.4%. However, there are respondents who believe that children fall less sick when proper nutritional practices are followed, and this belief is highest in UP with a percentage of 39.2%. A smaller portion of respondents thinks that proper nutritional practices lead to children having good height and weight, with Delhi accounting for the highest percentage at 17.6%.

Within nutrition, especially breastfeeding the Nutrition Expert among in these 4 states said that exclusive and continued breastfeeding is the important for children health and nutrition because breastfeeding is the only source of food to the child just after the birth, continued breastfeeding also help to mothers for weight loss, mother's need to breastfeed to the child at least two years of birth. It will save from non-communicable diseases, government need to promote actively breastfeeding in some rural area of these states, but present study found that in rural area in the four states there are many barriers in breastfeeding such as work schedule of working mothers mostly who are in the unorganized sector, less production of breast milk as mother herself doesn't get enough nutrition to produce milk. In rural area of Bihar and Jharkhand mother's think powder milk is healthier to breastfeed because advertisement on TV and road hoarding give effect on mothers thinking those uneducated. Cultural practices, advertisements promoting formula milk and overburdened working mothers are all the factors which affect breastfeeding.

V. Familial Factors and their Impact on Nutrition:

Jain et al (2020) explain that gender, birth order, and immunization status of child are significantly associated with nutritional status. This study showed that prevalence of malnutrition was less among those who received supplementary nutrition as compared to ones who did not.

In this sub head mothers 'perception about impact of their rural/ urban residence, family income, family type, lower age at childbirth, lower educational attainment, spacing between children, birth order of the child, gender of the child as factors affecting malnutrition are discussed.

a) Impact of Income:

State	Responses	frequency	Percentage
Delhi	No response	2	0.8
	No	73	29.2
	Yes	175	70.0
	Total	250	100.0
UP	No response	6	2.4
	No	13	5.2
	Yes	231	92.4

TABLE: 2.24 Ability to provide better nutrition to the child

	Total	250	100.0
Bihar	No response	4	1.6
	No	19	7.6
	Yes	227	90.8
	Total	250	100.0
Jharkhand	No response	12	4.8
	No	34	13.6
	Yes	204	81.6
	Total	250	100.0

Above table displays the percentage of responses regarding the mothers' perception for providing better nutrition to the child in the states Delhi, Jharkhand, Bihar and UP.

Upon comparison of data across these states, it reveals that majority of the mothers think that they can provide better nutrition to the child, where UP stands with a highest percentage at 92.4% while it is lowest in Delhi with a percentage of 70%.

TABLE: 2.25Ways to provide better nutrition

State	Responses	Frequency	Percentage
Delhi	Adequate food for every child	9	3.6
	Increased good quality food	205	82.0
	Increased amount of fruit	18	7.2

	Could give formula	0	0.0
	Any Other	18	7.2
	Total	250	100.0
UP	0	0	0.0
	Adequate food for every child	136	54.4
	Increased good quality food	77	30.8
	Increased amount of fruit	33	13.2
	Could give formula	3	1.2
	food/readymade food		
	Any Other	1	0.4
	Total	250	100.0
Bihar	0	1	0.4
	Adequate food for every child	135	54.0
	Increased good quality food	98	39.2
	Increased amount of fruit	16	6.4
	Could give formula	0	0.0
	food/readymade food		
	Any Other	0	0.0
	Total	250	100.0

Jharkhand	If yes then in	0	32	12.8
	what ways	Adequate food for	100	40.0
		every child		
		Increased good	112	44.8
		quality food		
		Increased amount	5	2.0
		of fruit		
		Could give	1	0.4
		formula		
		food/readymade		
		food		
		Any Other	0	0.0
		Total	250	100.0

The table 2.25 above represents the percentage of responses regarding the ways mothers can provide better nutrition to child in the states Delhi, Bihar, Jharkhand and UP. Upon comparison of data across these states, it reveals that some of the respondents believe that increasing the food quality is a way to provide better nutritious food to their child, where Delhi leads this category with a percentage of 82% while it is seen lowest in the UP at a percentage of 30.8%. There were respondents who consider providing an adequate food for every child as a way for better nutritious food for their child, where UP and Bihar stands with highest percentage i.e. 54.4% and 54% respectively.

Conversely, there were some respondents who believe increasing number of fruits is a way to provide better nutritious food to their child. In this category, UP stands with highest percentage i.e. 13.2% and Jharkhand stands at last with a percentage of 2.0%.

b) Impact of Type of Family Type:

Table 2.26 below shares information regarding the type of family respondents are living in the states namely Delhi, Bihar, UP and Jharkhand.

State	Item	Responses	Frequency	Percentage
Delhi	Type of family		1	0.4
		Nuclear	156	62.4
		joint	93	37.2
		Total	250	100.0
UP	Type of family		9	3.6
		Nuclear	155	62.0
		joint	86	34.4
		Total	250	100.0
Bihar	Type of family		7	2.8
		Nuclear	189	75.6
		joint	54	21.6
		Total	250	100.0
Jharkhand	Type of family		11	4.4

 TABLE: 2.26 Type of family

Nuclear	159	63.6
joint	80	32.0
Total	250	100.0

When we compared the data across these states, the findings display that majority of the population lives in a nuclear family, where Bihar constitutes highest percentage i.e. 75.6%. However, the lowest percentage was found in UP i.e. 62%.

State	Responses	Frequency	Percentage
Delhi	No Reply / Blank	98	39.2
	Adequate food for every	115	46.0
	child because of less family		
	member		
	More burdened in	14	5.6
	household work so focus		
	less on child's nutrition		
	Because of more earning	10	4.0
	members the child's		
	nutritional needs are		
	adequately met		
	Share responsibility of	3	1.2
	child feeding and care		
	Any Other	10	4.0
	Total	250	100.0
UP	No Reply / Blank	88	35.2
	Adequate food for every	80	32.0
	child because of less family		

TABLE: 2.27 Effect of nuclear family on child's nutrition

	member		
	More burdened in	65	26.0
	household work so focus		
	less on child's nutrition		
	Because of more earning	13	5.2
	members the child's		
	nutritional needs are		
	adequately met		
	Share responsibility of	2	0.8
	child feeding and care		
	Any Other	2	0.8
	Total	250	100.0
Bihar	No Reply / Blank	45	18.0
	Adequate food for every	84	33.6
	child because of less family		
	member		
	More burdened in	104	41.6
	household work so focus		
	less on child's nutrition		
	Because of more earning	13	5.2
	members the child's		
	nutritional needs are		
	adequately met		
	Share responsibility of	0	0.0
	child feeding and care		
	Any Other	4	1.6
	Total	250	100.0
Jharkhand	No Reply / Blank	55	22.0
	Adequate food for every	96	38.4
	child because of less family		

member		
More burdened in	68	27.2
household work so focus		
less on child's nutrition		
Because of more earning	9	3.6
members the child's		
nutritional needs are		
adequately met		
Share responsibility of	18	7.2
child feeding and care		
Any Other	4	1.6
Total	250	100.0

The table 2.27 above shows the percentage of responses regarding the effects of nuclear family on child's nutrition in the four states Delhi, Bihar, Jharkhand and UP. When we analyzed the data from all these states, the findings reveal that some of the respondent think in nuclear family adequate quantity of food is available for every child due to less family members. In this category, Delhi scores highest percentage at 46%, while it was found lowest in UP at 30%.

Contrary, some of the respondents think that overburdened household work leads to less focus on child's nutrition in nuclear families. In this perception, Bihar constitutes highest percentage i.e. 41.6% and found lowest in Delhi i.e., 5.6%.

State	Responses	Frequency	Percentage
Delhi	Blank / No Reply	165	66.0
	Less food for every child because more number of members	9	3.6

TABLE: 2.28 Effect of joint family on child's nutrition

	Less burdened in household work so can	39	15.6
	even cook separately for the child		
	less autonomy in taking decisions regarding	22	8.8
	child feeding and care		
	Any Other	15	6.0
	Total	250	100.0
UP	Blank / No Reply	145	58.0
	Less food for every child because more	36	14.4
	number of members		
	Less burdened in household work so can	41	16.4
	even cook separately for the child		
	less autonomy in taking decisions regarding	18	7.2
	child feeding and care		
	Any Other	10	4.0
	Total	250	100.0
Bihar	Blank / No Reply	171	68.4
	Less food for every child because more	29	11.6
	number of members		
	Less burdened in household work so can	34	13.6
	even cook separately for the child		
	less autonomy in taking decisions regarding	7	2.8
	child feeding and care		
	Any Other	9	3.6

	Total	250	100.0
Jharkhand	Blank / No Reply	147	58.8
	Less food for every child because more number of members	40	16.0
	Less burdened in household work so can even cook separately for the child	38	15.2
	less autonomy in taking decisions regarding child feeding and care	20	8.0
	Any Other	5	2.0
	Total	250	100.0

The Table 2.28above shares the percentage of responses regarding the effects of nuclear family on child's nutrition in the four states Delhi, Bihar, Jharkhand and UP. When we analyzed the data from all these states, the findings reveal that majority of the respondents chooses to opt "can't say anything" option, where Bihar stands with highest percentage i.e. 68.4%.

However, some of the respondents believe that in joint family less quantity of food is available for every child due to more family members. In this perception, Jharkhand scores highest percentage at 16%, while it was found lowest in Delhi at 3.6%.

Contrary, some of the respondents think that in joint families less burdened household work leads to separate focus and cooking for child. In this perception, UP constitutes highest percentage i.e. 16.4% and found lowest in Bihar i.e., 13.6%.

c) Impact of low Age of the Mother on child feeding

TABLE: 2.29 Age of mother and child feeding

State	Item	Responses	Frequency	Percentage
Delhi	Do you think that because of	No response	4	1.6
	your lower age at the time of	No	224	89.6
	childbirth could	Yes	22	8.8
	child feeding	Total	250	100.0
UP	Do you think that because of	No response	14	5.6
	your lower age at the time of	No	157	62.8
	childbirth could	Yes	79	31.6
	child feeding	Total	250	100.0
Bihar	Do you think that because of	No response	5	2.0
	your lower age at the time of	No	181	72.4
	childbirth could	Yes	64	25.6
	child feeding	Total	250	100.0
Jharkhand	Do you think that because of	No response	19	7.6
	your lower age at the time of	No	99	39.6
	childbirth could	Yes	132	52.8
	child feeding	Total	250	100.0

The table 2.29 above presents the percentage of responses regarding the effect of the lower age of mothers at the time of childbirth on the child feeding. The data was collected from Delhi, Bihar, Jharkhand and UP. Upon comparison of data across these states, it reveals that the respondents who think the lower age at childbirth time do not leads to focus less on child feeding is highest in Delhi with a percentage of 89.6%. However, it is found lowest in Jharkhand i.e. 39.6%.

Contrary, the respondents who think the lower age at childbirth leads to focus less on nutritional needs of child is highest in Jharkhand i.e. 52.8% and lowest in Delhi i.e. 8.8%.

State	Item	Responses	Frequency	Percentage
Delhi	If yes, then	Blank / No	227	90.8
	what ways	reply		
		Couldn't	12	4.8
		give		
		nutritious		
		food because		
		of less		
		knowledge		
		Couldn't	6	2.4
		manage		
		nutrition		
		pattern		
		especially in		
		the first-born		
		child		
		Couldn't	3	1.2
		give variety		
		of food		

TABLE: 2.30 Lower age of mother and child nutrition

		Couldn't	0	0.0
		give formula		
		food		
		Any Other	2	0.8
		Total	250	100.0
UP	If yes, then	Blank / No	161	64.4
	what ways	reply		
		Couldn't	38	15.2
		give		
		nutritious		
		food because		
		of less		
		knowledge.		
		Couldn't	31	12.4
		manage		
		nutrition		
		pattern		
		especially in		
		the first-born		
		child		
		Couldn't	20	8.0
		give variety		
		of food		
		Couldn't	0	0.0
		give formula		
		food		
		Any Other	0	0.0
		Total	250	100.0
Bihar	If yes, then	Blank / No	178	71.2
	what ways	reply		

		Couldn't	44	17.6
		give		
		nutritious		
		food because		
		of less		
		knowledge		
		Couldn't	14	5.6
		manage		
		nutrition		
		pattern		
		especially in		
		the first-born		
		child		
		Couldn't	7	2.8
		give variety		
		of food		
		Couldn't	1	0.4
		give formula		
		food		
		Any Other	6	2.4
		Total	250	100.0
Jharkhand	If yes, then	Blank / No	107	42.8
	what ways	reply		
		Couldn't	120	48.0
		give		
		nutritious		
		food because		
		of less		
		knowledge		
		Couldn't	16	6.4
		manage		

nutrition		
pattern		
especially in		
the first-born		
child		
Couldn't	6	2.4
give variety		
of food		
Couldn't	1	0.4
give formula		
food		
Any Other	0	0.0
Total	250	100.0

The above table represents the percentage of responses regarding the ways lower age at the time of childbirth leads to less focus on child feeding. The responses are from Delhi, Bihar, Jharkhand and UP. Upon comparison of data across these states, the findings highlight that respondents think that due to less knowledge regarding nutritious feeding, they were not able to focus properly on child's feeding, where Jharkhand accounts highest percentage i.e. 48.0%. However, it is lowest in Delhi at 4.8%.

It is worth noting that majority of the population choose to share "can't say anything" option, where Delhi scores highest percentage i.e. 90.8% and lowest in Jharkhand at 42.8%.

In table above, column N presents the percentage of responses regarding the mode of delivery opted for childbirth in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings reveal that respondents predominately opted for normal delivery for childbirth with Bihar having the highest percentage at 88.4%. However, some of the respondents chose Caesarean section as a mode of delivery for childbirth with UP having the highest percentage at 20.4%. The use of episiotomy as a mode of delivery for childbirth is highest in Bihar, accounting for 8%.

C) Impact of Mode of Childbirth:

State	Item	Responses	Frequency	Percentage
Delhi	Mode of delivery opted	No response	3	1.2
	for childbirth	Normal	194	77.6
		Caesarian	51	20.4
		Episiotomy	2	0.8
		Total	250	100.0
UP	Mode of delivery opted	No response	5	2.0
	for childbirth	Normal	193	77.2
		Caesarean	44	17.6
		Episiotomy	8	3.2
		Total	250	100.0
Bihar	Mode of delivery opted	No response	6	2.4
	for childbirth	Normal	221	88.4
		Caesarean	15	6.0
		Episiotomy	8	3.2
		Total	250	100.0
Jharkhand	Mode of delivery opted	No response	10	4.0
	for childbirth	Normal	188	75.2

TABLE 2.31 Mode of delivery opted for childbirth.

	Caesarean	32	12.8
	Episiotomy	20	8.0
	Total	250	100.0

TABLE 2.32 Mode of delivery has caused any effect on breastfeeding of child.

State	Item	Responses	Frequency	Percentage
Delhi	Mode of delivery has	No response	6	2.4
caused any effect on	No	211	84.4	
	breastfeeding of	Yes	33	13.2
	child	99	0	0.0
		Total	250	100.0
UP	Mode of delivery has	No response	10	4.0
	caused any	No	199	79.6
	effect on breastfeeding of	Yes	38	15.2
	child	99	3	1.2
		Total	250	100.0
Bihar	Mode of delivery has	No response	18	7.2
	caused any	No	188	75.2
	effect on	Yes	44	17.6

	breastfeeding of child	99	0	0.0
		Total	250	100.0
Jharkhand	Mode of delivery has	No response	43	17.2
	caused any	No	133	53.2
effect on breastfeeding of child	Yes	73	29.2	
	99	1	0.4	
		Total	250	100.0

When the data was analyzed across these states, the findings revealed that predominately respondents thinks that any mode of delivery do not cause any effect on the breastfeeding of child with Delhi having the highest percentage at 84.4%. In contrast, the respondent who thinks that there is any effect due to mode of delivery on the breastfeeding of child is highest in Jharkhand, accounting for 29.2%. The effect that is well established and revealed by the mothers is that in case of caesarean birth of the child, breastfeeding got delayed because the mother is sedated and is unable to feed the child in the most crucial first hour of the birth which is having a determining effect on the nutrition of their child.

IV. Drinking water and food related factors:

Household water security matters greatly for child nutrition outcomes. Water's role in sanitation/hygiene, via diarrheal disease, is a primary mechanism that may increase the rate of falling ill and hence perpetuate malnutrition among small children. Yet, the relationship between Water along with Sanitation and Hygiene (WASH) and child stunting remains inconclusive. Water-related mechanisms outside of the traditional scope of WASH might assist with explaining this. Choudhary et al (2021) explain that collectively, lack of access to

adequate and/or safe water and poor conditions of sanitation and hygiene have been considered key factors underlying the high incidence of child stunting in India.

In this sub section source of water at home, precautions taken by mother for drinking water, precautions taken by mother while handling raw vegetable and cooking food are discussed.

a) Source of drinking water:

State	Source of Drin	king Frequency	Percentage
State	Water		
	Tap in own residence	152	60.8
	1	-	
	Tanker/Truck	0	0.0
	Packaged Bottle	65	26.0
	Public tap	4	1.6
	Neighbors tap	1	0.4
	Hand pump in residence	0	0.0
Delhi	Neighbor's hand pump	0	0.0
	Public hand pump	0	0.0
	Tube well or bore well own residence	11	4.4
	Well in residence yard	0	0.0
	River/Dam/Pond/Stream/Canal/Irrigation	0	0.0
	Any Other	17	6.8
	Total	250	100.0
UP	Tap in own residence	116	46.4

TABLE 2.33 Source of drinking water

	Tanker/Truck	0	0.0
	Packaged Bottle	0	0.0
	Public tap	27	10.8
	Neighbors tap	5	2.0
	Hand pump in residence	64	25.6
	Neighbor's hand pump	3	1.2
	Public hand pump	33	13.2
	Tube well or bore well own residence	0	0.0
	Well in residence yard	1	0.4
	River/Dam/Pond/Stream/Canal/Irrigation	0	0.0
	Any Other	1	0.4
	Total	250	100.0
	Tap in own residence	24	9.6
	Tanker/Truck	0	0.0
	Packaged Bottle	0	0.0
	Public tap	33	13.2
Bihar	Neighbors tap	1	0.4
	Hand pump in residence	146	58.4
	Neighbor's hand pump	16	6.4
	Public hand pump	21	8.4
	Tube well or bore well own residence	9	3.6
	Well in residence yard	0	0.0

	River/Dam/Pond/Stream/Canal/Irrigation	0	0.0
	Any Other	0	0.0
	Total	250	100.0
	Tap in own residence	17	6.8
	Tanker/Truck	0	0.0
	Packaged Bottle	0	0.0
	Public tap	84	33.6
Jharkhand	Neighbors tap	14	5.6
	Hand pump in residence	8	3.2
	Neighbor's hand pump	11	4.4
	Public hand pump	49	19.6
	Tube well or bore well own residence	8	3.2
	Well in residence yard	34	13.6
	River/Dam/Pond/Stream/Canal/Irrigation	5	2.0
	Any Other	20	8.0
	Total	250	100.0

The above table depicts the source of drinking water within the households of four states Delhi, Bihar, Jharkhand and UP. A comparison of the data from these states reveals significant differences in the sources of drinking water: Delhi and Uttar Pradesh have the highest percentages of households with a source of drinking water within their residences, at 60.8% and 46.4%, respectively, indicating that a substantial portion of the population has access to drinking water within their homes. In contrast, Bihar and Jharkhand have much lower percentages of households with in-house drinking water sources, at 9.6% and 6.8%, respectively. However, in Uttar Pradesh, the common source of drinking water is residential hand pumps, accounting for 58.4% of households. In Jharkhand, public taps and public hand pumps are the most common sources of drinking water for households, with percentages of 33.6% and 19.6%, respectively.

b) Precautions for drinking water:

Precaution			Frequency	Percentage
for drinking	ITEM	Responses		
water: State				
	Precoutions taken with	No	242	96.8
Delhi	respect to drinking water	Yes	8	3.2
		Total	250	100.0
	Precautions taken with respect to drinking water	No	246	98.4
UP		Yes	4	1.6
		Total	250	100.0
	Precautions taken with	No	164	65.6
Bihar	respect to drinking water	Yes	86	34.4
		Total	250	100.0
	Productions taken with	No	241	96.4
Jharkhand	respect to drinking water	Yes	9	3.6
		Total	250	100.0

TABLE 2.34 Precautions for drinking water

The table 2.34 displays the percentage of responses regarding the precautions taken for drinking water in the states Delhi, Jharkhand, Bihar and UP. Upon comparison pf data across these states, it is seen that the majority of respondent population don not take precautions w.r.t drinking

water, where UP, Delhi and Jharkhand are having highest percentages i.e. 98.4%, 96.8% & 96.4% respectively. Contrary, Bihar stands out with highest percentage i.e. 34.4% who take precautions w.r.t drinking water while it is lowest in UP with a percentage of 1.6%.

State	Precautionsfordrinking water	Responses	Frequency	Percentage
		No	137	54.8
Delhi	Boil the water	Yes	113	45.2
		Total	250	100.0
		No	211	84.4
UP	Boil the water	Yes	39	15.6
		Total	250	100.0
		No	238	95.2
Bihar	Boil the water	Yes	12	4.8
		Total	250	100.0
		No	137	54.8
Jharkhand	Boil the water	Yes	113	45.2
		Total	250	100.0

TABLE 2.35Type of precautions taken for drinking water

The table 2.35 displays the percentage of responses regarding the precautions taken for drinking water in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it reveals that some of the respondents boil water as a precaution w.r.t to drinking water, where Delhi and Jharkhand are having highest percentage i.e. 45.2% respectively.

However, a majority do not boil water as a precaution w.r.t drinking water, where Bihar leads the category with a percentage of 95.2%.

State	Precautions drinking wate	for er	Responses	Frequency	Percentage
		1 • 1 •	No	119	47.6
Delhi	water the	drinking	Yes	131	52.4
			Total	250	100.0
		1 • 1 •	No	104	41.6
UP	Cover the d water	drinking	Yes	146	58.4
			Total	250	100.0
	C 1	1 • 1 •	No	178	71.2
Bihar	water the	drinking	Yes	72	28.8
			Total	250	100.0
	Correct the	1.1.1.1.1.	No	110	44.0
Jharkhand	water the	arinking	Yes	140	56.0
			Total	250	100.0

TABLE 2.36 Cover the utensil carrying drinking water

The table 2.36 displays the percentage of responses regarding the precautions taken for drinking water in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it reveals that some of the respondents do not cover the drinking water as a precaution, where Bihar has the highest percentage i.e. 71.2%.

However, there are respondents who cover the drinking water as a precaution where UP leads the category with a percentage of 58.4%.

Few other responses regarding precautions related to drinking water included use of a long stem spoon to fetch water from storage container, keeping the drinking water covered, using fine clothes to filter the water, purify using chemicals and lastly buying the water from market (only found in Delhi). Precautions taken while cooking: when probed on this issue the mothers report following precautions taken.

State	Precautions for drinking water	Responses	Frequency	Percentage
		No	14	5.6
Delhi	Use clean utensils	Yes	236	94.4
		Total	250	100.0
		No	51	20.4
UP	Use clean utensils	Yes	199	79.6
		Total	250	100.0
		No	47	18.8
Bihar	Use clean utensils	Yes	203	81.2
		Total	250	100.0
		No	79	31.6
Jharkhand	Use clean utensils	Yes	171	68.4
		Total	250	100.0

TABLE 2.37Store drinking water

The table 2.37 represents the percentage of responses regarding the precautionary measures taken while preparing milk/ cooking food in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it reveals that many respondents use clean utensils while preparing milk or cooking food. Delhi leads this category at a percentage of 94.4%.

Contrary, there are some respondents who do not use clean utensils while preparing milk or cooking food. In this, Jharkhand stands out with the highest percentage i.e. 31.6%.

 TABLE 2.38Precautions taken while preparing milk/cooking food

State	Precautions taken while preparing milk/cooking food	Responses	Frequency	Percentage
		No	244	97.6
Delhi	Use clean feeding bottle	Yes	6	2.4
		Total	250	100.0

UP	Use clean feeding bottle	No	224	89.6
		Yes	26	10.4
		Total	250	100.0
		No	232	92.8
Bihar	Use clean feeding bottle	Yes	18	7.2
		Total	250	100.0
		No	225	90.0
Jharkhand	Use clean feeding bottle	Yes	25	10.0
		Total	250	100.0

The table 2.38 represents the percentage of responses regarding the precautionary measures taken while preparing milk in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it reveals that respondents predominantly do not use clean feeding bottles in the milk preparation and Delhi leads in this category at a percentage of 97.6%. Conversely, for the respondents who use clean feeding bottles in the milk preparation, UP accounts highest percentage of 10.4%.

TABLE 2.39	Washing	hands	while	preparing	milk/cooking	food
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State	Precautions taken while preparing milk/cooking food	Responses	Frequency	Percentage
Delhi	Washing hands with soap before handling food	No	109	43.6
		Yes	141	56.4
		Total	250	100.0
UP	Washing hands with soap before handling food	No	139	55.6
		Yes	111	44.4
		Total	250	100.0
Bihar	Washing hands with soap before handling food	No	146	58.4
		Yes	104	41.6
		Total	250	100.0
	Washing hands with soon	No	133	53.2
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Jharkhand	before handling food	Yes	117	46.8
		Total	250	100.0

The table 2.39 represents the percentage of responses regarding the precautionary measures taken while preparing milk/cooking food in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings highlight the differing behaviors in food preparation practices, particularly related to hand hygiene, where the respondents in Delhi exhibit a practice of washing their hands with soap before handling food, with the highest percentage of 56.4%. However, in contrast, the respondents in Bihar do not wash their hands with soap before handling food, with the highest percentage of 58.4%. Apart from this, a fraction of mothers also report that they wash their hands with only water or mud or ash as the soap many a times is unavailable.

State	Precautions taken while preparing milk/cooking food	Responses	Frequency	Percentage
	Wesh fruits and new	No	137	54.8
Delhi	vegetables	Yes	113	45.2
		Total	250	100.0
	Wash fruits and raw vegetables	No	133	53.2
UP		Yes	117	46.8
		Total	250	100.0
		No	171	68.4
Bihar	Wash fruits and raw vegetables	Yes	79	31.6
		Total	250	100.0
	West forthe and	No	109	43.6
Jharkhand	Wash truits and raw vegetables	Yes	141	56.4
		Total	250	100.0

TABLE 2.40 Washing fruits and vegetables before cooking

The table 2.40 represents the percentage of responses regarding the precautionary measures taken while preparing milk/cooking food in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings highlight that the respondents in Jharkhand exhibit a practice of washing fruits and raw vegetables and account for the highest percentage of 56.4%. While it is lowest in Bihar at a percentage of 31.6%/

Contrary, 54.8% of respondents in Bihar do not exhibit a practice of washing fruits and vegetables, which highest among all states. However, it is lowest in Jharkhand at a percentage of 43.6%.

State	Precautions taken while preparing milk/cooking food	Responses	Frequency	Percentage
		No	129	51.6
Delhi	Cover the cooked food	Yes	121	48.4
		Total	250	100.0
		No	134	53.6
UP	Cover the cooked food	Yes	116	46.4
		Total	250	100.0
		No	142	56.8
Bihar	Cover the cooked food	Yes	108	43.2
		Total	250	100.0
		No	107	42.8
Jharkhand	Cover the cooked food	Yes	143	57.2
		Total	250	100.0

 TABLE 2.41 Covering the cooked food

The table 2.41 represents the percentage of responses regarding the precautionary measures taken while preparing milk/cooking food in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings highlight that the respondents in Jharkhand exhibit a specific practice of covering the food items and account for the highest percentage of 57.2%. Contrary, 56.8% of respondents in Bihar do not exhibit the practice of covering cooked food, which is the highest among all states.

The nutrition experts opined that for maintaining personal hygiene bathing, brushing, nail cutting, hair cutting, wearing clean clothes, and washing hands before meals are some of the important practices. At the environmental level, daily cleaning of utensils, rooms, toilets and promoted hand wash practices. To ensure hygiene, both the family and the AWC must work towards it. Next regarding best practice adopted for preventing diarrhoeal diseases, they opined that use clean water, boil water when water is not clean, use properly cooked food, avoid eating street food, use wash practices and maintain hygienic environment.

Nutrition experts are also of the view that handwashing with mud/ash is largely practiced in rural areas. It was harmful because washing hands with mud and ash does not give proper hygiene. Using mud and ash doesn't clean the hands properly and germs remain on the child's hands and body. In rural India, where availability of soap is scarce, hand washing with ash is likely to be more effective than hand washing with water alone. Washing hands with mud is not safe at all because mud contains several microorganisms which can infect the hands of the person and may cause skin and digestive ailments.

About drinking water, the nutrition experts opined that best practice adopted for preventing diarrhoeal diseases are use clean water, boil water when water is not clean, use properly cooked food, avoid eating street food, use wash practices and maintain hygienic environment. The best method for purifying the water in the absence of filter is to boil the water before use. In case boiling is not possible then putting chlorine tablets in the water pot also disinfects water which is also safe for drinking. Using packaged water for drinking is also a solution but it is not cost effective for low-income group families.

V. Hygiene and sanitation related practices as factors affecting nutrition of children.

A story in the New York Times (2014) explored the link between high rates of child malnutrition in India and the country's poor sanitation, shedding light on a potential cause of a protracted problem. For India, the issue is not a lack of food, but rather a lack of toilets for its population one-half of India's population, at least 620 million people, defecates outside. The interaction between diarrheal disease and malnutrition is well established. Diarrhoea is often caused by a lack of clean water for proper handwashing. A lack of toilets further exacerbates the problem as feces on the ground contribute to contaminated drinking water and water resources in general.

The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) also underscore that the role of WASH should not only be seen in terms of health impact but should also focus on associated intermediate outcomes such as diarrhoea, dietary diversity, and so on. Although WASH interventions are often described in terms of their role in preventing disease transmission, the benefits are not confined to health. Thus, there is growing rationale for empirical testing of possible broader and more integrated pathways linking varied aspects of WASH with varied nutrition outcomes.

Henceforth it is imperative to discuss the impact of hygiene and sanitation practices. In this sub section the variables discussed include type of toilet facility, precautions taken by mothers and children after using toilet and bathing practices.

a) Type of Toilet facility:

State	Toilet facility	Frequency	Percentage
	No facility /open defecation	0	0.0
	Own pour flush	0	0.0
	Shared pour flush	0	0.0
Delhi	Own flush toilet	172	68.8
	Shared flush toilet	0	0.0
	Public Flush toilet	0	0.0
	Own pit toilet	0	0.0
	Shared pit toilet	0	0.0

 TABLE 2.42 Type of Toilet facility

	own septic tank	78	31.2
	Shared Septic tank	0	0.0
	Others	0	0.0
	Total	250	100.0
	No facility /open defecation	0	0.0
	Own pour flush	0	0.0
	Shared pour flush	0	0.0
	Own flush toilet	45	18.0
	Shared flush toilet	0	0.0
UP	Public Flush toilet	0	0.0
	Own pit toilet	0	0.0
	Shared pit toilet	0	0.0
	own septic tank	205	82.0
	Shared Septic tank	0	0.0
	Others	0	0.0
	Total	250	100.0
	No facility /open defecation	0	0.0
Bihar	Own pour flush	0	0.0
	Shared pour flush	0	0.0
	Own flush toilet	16	6.4
	Shared flush toilet	0	0.0
	Public Flush toilet	0	0.0

	Own pit toilet	0	0.0
	Shared pit toilet	0	0.0
	own septic tank	234	93.6
	Shared Septic tank	0	0.0
	Others	0	0.0
	Total	250	100.0
	No facility /open defecation	0	0.0
	Own pour flush	0	0.0
	Shared pour flush	0	0.0
	Own flush toilet	25	10.0
	Shared flush toilet	0	0.0
Jharkhand	Public Flush toilet	0	0.0
	Own pit toilet	0	0.0
	Shared pit toilet	0	0.0
	own septic tank	225	90.0
	Shared Septic tank	0	0.0
	Others	0	0.0
	Total	250	100.0

The above table 2.42 presents information about toilet facilities within households in four states: Delhi, Uttar Pradesh, Bihar, and Jharkhand. When interpreting the data across these states, a clear difference in toilet facilities emerges, particularly between Delhi and the other three states: In Delhi, most of the population has access to their own flush toilets, representing 68.8% of households. In contrast, Uttar Pradesh, Jharkhand, and Bihar have significantly lower percentages for this facility, at 18%, 10%, and 6.4%, respectively. Conversely, in Bihar, Jharkhand, and Uttar Pradesh, the predominant toilet facility is a septic tank, with very high percentages: 93.6%, 90%, and 80%, respectively, while it is lowest in Delhi with 31.2 %.

b) Precaution taken by mother after using toilet:

State	Precautions taken by mother's after using toilet	Responses	Frequency	Percentage
		No Precautions	16	6.4
		Wash hands with soap	234	93.6
		Wash hands with mud	0	0.0
Delhi	Precautions taken after using the toilet	Wash hands with ash	0	0.0
		Wash hands with water	0	0.0
		Any Other	0	0.0
		Total	250	100.0
		No Precautions	28	11.2
	Precautions taken after using the toilet	Wash hands with soap	216	86.4
		Wash hands with mud	1	0.4
UP		Wash hands with ash	1	0.4
		Wash hands with water	4	1.6
		Any Other	0	0.0
		Total	250	100.0
Bihar	Precautions taken after	No Precautions	45	18.0

 TABLE 2.43 Precaution taken by mother after using toilet

	using the toilet	Wash hands with soap	180	72.0
		Wash hands with mud	22	8.8
		Wash hands with ash	1	0.4
		Wash hands with water	2	0.8
		Any Other	0	0.0
		Total	250	100.0
		No Precautions	55	22.0
		Wash hands with soap	157	62.8
		Wash hands with mud	10	4.0
Jharkhand	Precautions taken after using the toilet	Wash hands with ash	4	1.6
		Wash hands with water	24	9.6
		Any Other	0	0.0
		Total	250	100.0

The above table 2.43 represents the percentage of responses regarding the precautions taken after using the toilet. These responses were collected from Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings reveal that the majority of respondents wash their hands with soap after using the toilet, where Delhi has a high percentage of 93.6% and lowest in Jharkhand at a percentage of 62.8%.

Some of the respondents do not take any precautions after using a toilet, where Jharkhand lead at a percentage of 22%. The respondents who wash their hands with water only is lowest in Delhi, where no one washes their hand with water after using toilet.

TABLE:2.44 Precautions taken by children after using the latrine

State	Precautions taken by children after using the latrine	Frequency	Percentage
	No Precaution	0	0.0
	Wash hands with soap	250	100.0
Delhi	Wash hands with ash	0	0.0
Demi	Wash hands with water	0	0.0
	Any Other	0	0.0
	Total	250	100.0
	No response	17	6.8
	No Precaution	2	0.8
	Wash hands with soap	231	92.4
UP	Wash hands with ash	0	0.0
	Wash hands with water	0	0.0
	Any Other	0	0.0
	Total	250	100.0
	No response	42	16.8
	No Precaution	39	15.6
	Wash hands with soap	165	66.0
Bihar	Wash hands with ash	0	0.0
Dina	Wash hands with water	0	0.0
	Any Other	1	0.4
	Not applicable	3	1.2
	Total	250	100.0
	No response	64	25.6
	No Precaution	8	3.2
Iharkhand	Wash hands with soap	159	63.6
	Wash hands with ash	4	1.6
	Wash hands with water	0	0.0
	Any Other	15	6.0

Not applicable	0	0.0
Total	250	100.0

The table 2.35 represents the percentage of responses regarding the precautions taken by children after using latrine. These responses were collected from Delhi, Bihar, Jharkhand and UP. Upon comparison of data across these states, the findings reveal that majority of the respondents share that child exhibits a practice of washing hands with soap after using latrine, where Delhi has significant percentage at 100%. However, Jharkhand stands last in this category at a percentage of 63.6%.

Table 2.45 Bathing practices of the child

State	Bathing Practices of the Child	Responses	N-Frequency	Percentage
			1	0.4%
		Everyday	84	33.6
Delhi	How often child takes bath	Every other day	162	64.8
		Once in a week	3	1.2
		Total	250	100.0
	How often child takes bath		2	0.8
		Everyday	218	87.2
UP		Every other day	24	9.6
		Once in a week	6	2.4
		Total	250	100.0
			5	2.0
Bihar	How often child takes bath	Everyday	223	89.2
		Every other day	18	7.2

		Once in a week	4	1.6%
		Total	250	100.0
			10	4.0
		Everyday	115	46.0
Jharkhand	How often child takes bath	Every other day	108	43.2
		Once in a week	17	6.8
		Total	250	100.0

The table above, column N represents the percentage of responses regarding the bathing pattern of child in the states of Delhi, Bihar, Jharkhand and UP.

Upon comparison of data from all these states, the findings reveal that most of respondents in Bihar share that their child baths everyday which accounts 89.2% and is the highest among all. However, Delhi stands at last in this category with a percentage of 33.6%. The respondents whose child baths every other day are highest in Delhi with a percentage of 64.8% while it is lowest in Bihar with a percentage of 7.2%. The respondents whose child baths once in a week is highest in Jharkhand with a percentage of 6.8% and it is lowest in Delhi i.e. 1.2%

State	ITEM	Responses	Percentage
		No response	1.2
		Pond/Lack/River	1.6
	The bathing place of child	Bathroom in home	96.4
Delhi		Public Community	0.4
		bathroom	
		Any Other	0.4
		Total	100.0
IID	The bathing place of child	No response	1.6
Ur		Pond/Lack/River	0.8

TABLE:2.46 The bathing place of child

		Bathroom in home	84.8
		Public Community	9.6
		bathroom	
		Any Other	3.2
		Total	100.0
		No response	2.8
		Pond/Lack/River	1.6
	The bathing place of child	Bathroom in home	59.6
Bihar		Public Community	34.0
		bathroom	
		Any Other	2.0
		Total	100.0
		No response	4.4
		Pond/Lack/River	28.4
		Bathroom in home	40.0
Jharkhand	The bathing place of child	Public Community	24.4
		bathroom	
		Any Other	2.8
		Total	100.0

The table 2.46 refers to the percentage of responses regarding the bathing place of child in the states namely Delhi, Bihar, Jharkhand and UP. Upon analyzing data across these states, the findings highlight that the majority of the children bathe in their home bathrooms, where Delhi has the highest percentage of 96.4%.

The respondents who share their child take bath in pond/lake/river are highest in Jharkhand at a percentage of 28.4%. Bihar has the highest percentage of respondents i.e. 34% who share that their child takes bath in public community bathrooms.

State	ITEM	Responses	Frequency	Percentage
	substance child	Blank / No	5	2.0
Delhi	usually uses for	Reply		
	bathing	Soap or Gel	240	96.0
		Detergent	0	0.0
		Ash/Mud	0	0.0
		Nothing	0	0.0
		Any Other	5	2.0
		Total	250	100.0

TABLE:2.47	Substance	child	usually	uses	for	bathing

	substance child	Blank / No	8	3.2
	usually uses for	Reply		
	bathing	Soap or Gel	236	94.4
		Detergent	1	0.4
UP		Ash/Mud	0	0.0
		Nothing	5	2.0
		Any Other	0	0.0
		Total	250	100.0
	substance child	Blank / No	14	5.6
	usually uses for	Reply		
	bathing	Soap or Gel	222	88.8
Dihan		Detergent	2	0.8
Dillai		Ash/Mud	3	1.2
		Nothing	8	3.2
		Any Other	1	0.4
		Total	250	100.0
	substance child	Blank / No	14	5.6
	usually uses for	Reply		
	bathing	Soap or Gel	233	93.2
Jharkhan		Detergent	0	0.0
d		Ash/Mud	0	0.0
		Nothing	2	0.8
		Any Other	1	0.4
		Total	250	100.0

The table 2.47 depicts the percentage of responses regarding the substance used by children for bathing in the states Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, the findings reveal that the majority of the respondents share the *soap/gel* are mainly used by children for bathing, where Delhi stands with highest percentage i.e., 96%. However, it is the lowest in Bihar with a percentage of 88.8%.

In this regard nutrition experts opined that Poor water quality play major role for children skin and body diseases. Poor water quality and bathing affect the children's skin and hair loss, many skins diseases are caused due to quality of water. Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, and polio. Parents and AWWs need to ensure that children follow daily hygiene and hand WASH practices. Sometimes parents are not aware of personal grooming and hygiene practices; hence there is a need to conduct regular awareness programmes for parents at the AWCs. Hygiene must be maintained both at a personal level as well as at an environmental level. For maintaining personal hygiene bathing, brushing, nail cutting, hair cutting, wearing clean clothes, and washing hands before meals are some of the important practices. At the environmental level, daily cleaning of utensils, rooms, toilets and promoted hand wash practices. To ensure hygiene, both the family and the AWC must work towards it.

VI. Mothers' Autonomy as a Factor for Malnutrition:

a) Mother's participation in agriculture/ labour work:

State	Mothers' participation agriculture / labour work	in	Responses	Frequency	Percentage
	Support husband	in	No	240	96.0
Delhi	Agricultural/livestock/labour		Yes	10	4.0
	work		Total	250	100.0
	support husband	in	No	208	83.2
UP	Agricultural/livestock/labour		Yes	42	16.8
	work		Total	250	100.0
	Support husband	in	No	196	78.4
Bihar	Agricultural/livestock/labour		Yes	54	21.6
	work		Total	250	100.0
	support husband	in	No	111	44.4
Jharkhand	Agricultural/livestock/labour		Yes	139	55.6
	work		Total	250	100.0

TABLE:2.48 Support husband in Agricultural/livestock/labour work

The table 2.48 represents the percentage of responses regarding the level of support provided by wives to their husbands in agricultural, livestock, and labour work. These responses were collected from the states of Delhi, Jharkhand, Uttar Pradesh, and Bihar. While analyzing the data across these states, it reveals that respondents predominately claim that they do not actively support their husbands in agricultural/livestock/labour work. Delhi's respondents lead in this category with a percentage of 96%.

Contrary, Jharkhand has a highest percentage i.e. 55.6% for the respondents who support their husbands in agricultural/livestock/labour work.

TABLE:2.49Feeding responsibility of children when mother is in the farm

State	Mothers' participation in agriculture/ labour work	Responses	N-Frequency	Percentage
		No Response / Blank	238	95.2
	feeding responsibility of	In laws	4	1.6
Dalla	children when they are	Elder siblings	6	2.4
Demi	occupied with husband's	Neighbour	0	0.0
	work	AWW	0	0.0
		Any Other	2	0.8
		Total	250	100.0
		No Response / Blank	206	82.4
	feeding responsibility of	In laws	17	6.8
	children when they are	Elder siblings	16	6.4
UP	occupied with husband's	Neighbour	2	0.8
	work	AWW	5	2.0
		Any Other	4	1.6
		Total	250	100.0
		No Response / Blank	195	78.0
	feeding responsibility of	In laws	19	7.6
Dihan	children when they are	Elder siblings	14	5.6
Dinar	occupied with husband's	Neighbour	17	6.8
	work	AWW	0	0.0
		Any Other	5	2.0
		Total	250	100.0
		No Response / Blank	96	38.4
	feeding responsibility of	In laws	59	23.6
Thoulthand	children when they are	Elder siblings	50	20.0
Jnarknand	occupied with husband's	Neighbour	7	2.8
	work	AWW	31	12.4
		Any Other	7	2.8
		Total	250	100.0

In the data table 2.49-, column N displays the percentage of responses regarding feeding responsibility of children, when they are occupied with husband's work. These responses were collected from Delhi, Jharkhand, Bihar and UP. Upon comparison of data across all states, it highlights those respondents predominately prefer 'can't say anything" option, where Delhi stands at highest percentage of 95.2%. In contrast, Jharkhand leads the category where in-laws

were taking care of child during the absence of their mother, with a percentage of 38.4% while it is lowest in Delhi with a-percentage of 1.6%.

a) Decision about food item safety for children:

States	Decision about what food items is safe to the offered to children	Frequency	Percent
	Father	24	9.6
	Mother	222	88.8
Delhi	Any influencing family member	4	1.6
	Total	250	100
	Father	64	25.6
	Mother	145	58
Uttar Pradesh	Any influencing family member	41	16.4
	Total	250	100
	Father	48	19.2
	Mother	168	67.2
Bihar	Any influencing family member	34	13.6
	Total	250	100.0
	Father	115	46
11 1-1 1	Mother	83	33.2
JharKhand	Any influencing family member	52	20.8
	Total	250	100.0

TABLE 2.50 Decision about what food items is safe to the offered to children

The table 2.50 displays the percentage of responses regarding the decision making of safe food items being offered to children. These responses were collected from Delhi, Jharkhand, Bihar and UP. Upon comparison of all data from these states, it reveals that in Delhi mothers are the primary person to decide for their child's diet. Next the role of mothers is decreasing in the order of Bihar, UP and Jharkhand. Similarly, the role of influencing members, which means mother-in-law is found clearly more in Jharkhand. This analysis shows that the authority of mothers in deciding for their children is less as compared to other states.

a) Introduction of a new food item to the child:

State	ITEM		Frequency	Percentage
	If you want to introduce a new	No	81	32.4
	nutritious food item to your	Yes	169	67.6
Delhi	child which is not prevalent in		250	100.0
	the family, then can do so with	Total		
	minimum resistance			
	If you want to introduce a new	No	105	42.0
	nutritious food item to your	Yes	145	58.0
UP	child which is not prevalent in		250	100.0
	the family, then can do so with	Total		
	minimum resistance			
	If you want to introduce a new	No	91	36.4
	nutritious food item to your	Yes	159	63.6
Bihar	child which is not prevalent in		250	100.0
	the family, then can do so with	Total		
	minimum resistance			
	If you want to introduce a new	No	71	28.4
Jharkhand	nutritious food item to your	Yes	179	71.6
	child which is not prevalent in		250	100.0
	the family, then can do so with	Total		
	minimum resistance			

TABLE: 2.51Challenges in introducing new nutritious food item to your child

The table 2.51 represents the percentage of responses regarding the introduction of new nutritious food item for the child with some minimal resistance. These responses were collected from Delhi, Jharkhand, Bihar and UP. Upon comparison of data across these states, it reveals that most of the respondents assure that they can introduce new nutritious food items for the child with minimal resistance from family. This category was led by Jharkhand with a percentage of 71.6%. However, in contrast, UP stands out with the highest percentage i.e., 42% who feel that they can't introduce new nutritious item for their child within the family.

VII. Lack of provisions at Anganwadi Centres

ICDS operates as a nutrition safety-net program through Anganwadi centres (AWC), and local Anganwadi Workers (AWW) are sanctioned to provide cooked meals and informal preschool activities for children under 6; supplementary food and nutrition counselling for adolescent girls, pregnant women, and breastfeeding mothers; home visits and growth monitoring of children; and community programming, such as the village health and nutrition days (VHND). However, poor ration provision; quality of food, ineffective WASH facilities and attitude of AWWs towards sanitation and hygiene among children becomes contributing factors to malnutrition among children attending AWCs. These variables are further discussed in this subhead.

a) Provision of Morning Snacks and Hot Cooked Meal at AWC:

State	Morning snacks and hot-cooked meal both are provided at AWC	Frequency	Percent
Delhi	Hot cooked meal	1	20.0
	Morning snacks	1	20.0
	Both	1	60.0
	Total	3	100.0
UP	Not provided any	8	100.0
	food in the AWC		
	Total	8	100.0
Jharkhand	Hot cooked meal	1	12.5
	Both	2	25.0
	Not provided any	5	62.5
	food in the AWC		
	Total	8	100.0

TABLE: 2.52 Morning snacks and hot-cooked meal both provided at AWC

Please note: no information available from Bihar ICDS

Above table 2.52 shows Delhi AWC are providing 20% hot cooked meal only, other providing 20% morning snacks and in 60% of AWC providing both hot cooked meals and morning snacks. In UP 100% AWC were not providing both hot cooked meals and morning snacks. In Jharkhand

25% AWC proving both Hot cooked meals and morning snacks and in 62.5% were not providing any meal.

b) Regular supply of raw materials/food for all children registered in your AWC:

	1	1	1
States	Responses	Frequency	Percentage
Delhi	cannot say	3	6.0
	Yes, regularly supplied	37	74.0
	Yes, but limited and not regular	3	6.0
	No	7	14.0
	Total	50	100.0
UP	Yes, regularly supplied	30	60.0
	Yes, but limited and not regular	11	22.0
	No	9	18.0
	Total	50	100.0
	Yes, regularly supplied	30	60.0
Jharkhand	Yes, regularly supplied	20	39.2
	Yes, but limited and not regular	20	39.2
	No	11	21.6
	Total	51	100.0

TABLE:2.53 Regular supply of raw materials/food for all children registered in AWC

Please note: no information available from Bihar ICDS

The table 2.53 provides an overview of food supply in Anganwadi Centers (AWCs) in Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 74% report regular food supply, 6% mention limited and irregular supply, and 14% indicate no regular supply. In UP, 60% note regular supply, 22% report limited and irregular supply, and 18% state no regular supply. Jharkhand shows an even split with 39.2% for regular supply, 39.2% for limited and irregular supply, and 21.6% for no regular supply, highlighting variations in food provision across the states.

These findings highlight disparities in food supply regularity and adequacy in AWCs across states. Delhi and UP's substantial percentages reporting regular supply reflect efforts in ensuring food security for registered children. In contrast, Jharkhand's diverse responses suggest room for improvement in streamlining food supply systems for consistent child nutrition. This data is crucial for policymakers and child welfare organizations, providing insights for targeted interventions to enhance food supply reliability in AWCs and promote registered children's wellbeing.

c)Quality of food given to children at AWC:

States	Responses	Frequency	Percentage
Delhi	cannot say	2	4.0
	good	40	80.0
	Average	8	16.0
	Total	50	100.0
UP	cannot say	3	6.0
	good	19	38.0
	Average	17	34.0
	Not good	10	20.0
	other	1	2.0
	Total	50	100.0
Jharkhand	good	30	58.8
	Average	20	39.2
	Not good	1	2.0
	Total	51	100.0

TABLE: 2.54 Quality of food given to children at AWC

Please note: no information available from Bihar ICDS

The table 2.54 provides valuable insights into the perceived quality of food provided to children in Anganwadi Centers (AWCs) across three diverse states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a significant 80% of respondents view the quality of food as good, with only a small fraction (4%) unable to provide an opinion. Similarly, Jharkhand receives positive feedback, as 58.8% of respondents consider the food quality good, while a mere 2% express dissatisfaction. However, the situation in UP is more varied, with 38% rating the quality as good, 34% perceiving it as average, and 20% finding it not good. Additionally, 6% of UP respondents could not form an opinion, and 2% fall into the "other" category.

These findings underscore regional disparities in the perceived quality of food provided to children in AWCs. While Delhi and Jharkhand seem to be doing well in terms of the perceived quality, UP exhibits a more mixed assessment, suggesting room for improvement in ensuring consistent high-quality food provision. This data is invaluable for policymakers and

organizations working toward improving child nutrition, providing them with insights into where efforts can be targeted to enhance the overall quality of food offered to children in AWCs.

VIII. Impact of Malnutrition on Child Health, Growth and Development:

Children who are malnourished-not just fussy eaters but truly deprived of adequate calories and protein in their diet-throughout this period do not adequately grow, either physically or mentally. Their brains are smaller than normal because of reduced dendritic growth, reduced myelination, and the production of fewer glia (supporting cells in the brain which continue to form after birth and are responsible for producing myelin). Inadequate brain growth explains why children who were malnourished as fetuses and infants suffer often lasting behavioral and cognitive deficits, including slower language and fine motor development, lower IQ, and poorer school performance.

Wali, Agho and Renzaho (2019) Malnutrition is the most severe consequence of food insecurity amongst children under the age of 5 years. Acute malnutrition can lead to morbidity, mortality, and disability, as well as impaired cognitive and physical development with an increased risk of concurrent infections. Physical and mental health development is a fundamental right of a child, and their optimum level of health can be accessed with good nutritional support.

The above discussion establishes the fact that malnutrition has long lasting effects over a child's life. Hence in this sub head the variables discussed are health status of the child, rate of falling ill in last 3 months, mothers' anxiety about overt symptoms of malnutrition and effect of malnutrition on child development milestones.

a) Health status of the Child:

State	Overall health perception of child	Frequency	Percentage
Delhi	Poor	36	14.4
	Good	213	85.2
	Excellent	1	0.4
	Total	250	100.0
UP	Poor	121	48.4
	Good	120	48.0

 TABLE: 2.55 Health status of the child

	Excellent	9	3.6
	Total	250	100.0
Bihar	Poor	160	64.0
	Good	88	35.2
	Excellent	2	0.8
	Total	250	100.0
Jharkhand	Poor	82	32.8
	Good	161	64.4
	Excellent	7	2.8
	Total	250	100.0

State	In the last three months fever cold pain etc.	Frequency	Percentage
Delhi	Never	46	18.4
	Once	106	42.4
	Twice	63	25.2
	Thrice	22	8.8
	More than thrice	13	5.2
	Total	250	100.0
UP	Never	54	21.6
	Once	62	24.8
	Twice	82	32.8
	Thrice	35	14.0
	More than thrice	17	6.8
	Total	250	100.0
Bihar	Never	58	
	Once	71	28.4
	Twice	73	29.2
	Thrice	17	6.8
	More than thrice	31	12.4
	Total	250	100.0

Jharkhand	Never	25	10.0
	Once	88	35.2
	Twice	72	28.8
	Thrice	27	10.8
	More than thrice	38	15.2
	Total	250	100.0

In the table above, column Nie frequency, shares the insights about the overall health perception of children from the four states Delhi, Bihar, Jharkhand and UP, as represented in percentages. Upon analyzing the data from all these states, the data showcases that Delhi leads in the perception of children having good health, with a percentage of 85.2%. Jharkhand, UP &Bihar follow with a percentage of 64%, 48 % and 35.2% respectively, indicating varying levels of perceived good health in these states. On the other hand, the perception of children having poor overall health tops in Bihar state at 64%, while it is lowest in Delhi at 14.4%. Notably, the perception of children having excellent overall health is significantly lower in all these states with highest percentage at

Table 2.56 Child Falling III in last 3 months

3.6% in UP and lowest in Delhi 0.4%.

In the table 2.56 above, column N shares the information about the children who experienced illness in the last three months including symptoms like fever/cold/cough/ear pain/loose motions etc., from the four states Delhi, Bihar, UP & Jharkhand. A comparative account of the data across the four states, it is evident from the data that children who did not face any kind of illness is more in Bihar with a percentage of 23.2%. UP, Delhi and Jharkhand follow with a percentage of 21.6%, 18.4% & 10% respectively. However, for the child who face illness once in the last three months is highest in Delhi with a percentage of 42.4 %, while it is lowest in the UP at 24.8%.

On the other hand, UP tops the category where child faces illness twice in the last three months with a percentage of 32.8%, while followed by Bihar, Jharkhand, and Delhi at 29.2%, 28.8% and 25.2% respectively.

For the child who face illness thrice in the last three months, Jharkhand leads the category with 10.8%, while Bihar and Uttar Pradesh have the lowest percentage at 6.8%. When it comes to children who faced illness more than thrice, Jharkhand has the highest percentage at 15.2%, while Delhi has the lowest at 5.2%.

In the table above, column N shares the information about the children who experienced illness in the last three months including symptoms like fever/cold/cough/ear pain/loose motions etc., from the four states Delhi, Bihar, UP & Jharkhand. A comparative account of the data across the four states, it is evident from the data that children who did not face any kind of illness is more in Bihar with a percentage of 23.2%. UP, Delhi and Jharkhand follow with a percentage of 21.6%, 18.4% & 10% respectively. However, for the child who face illness once in the last three months is highest in Delhi with a percentage of 42.4 %, while it is lowest in the UP at 24.8%.

a) Mothers' Anxiety about Child's Growth and Health:

State	Worry or anxiety about your child's growth and health	Frequency	Percentage
Delhi	No	79	31.6
	Yes	171	68.4
	Total	250	100.0
UP	No	27	10.8
	Yes	233	89.2
	Total	250	100.0
Bihar	No	32	12.8
	Yes	218	87.2
	total	250	100.0
Jharkhand	No	8	3.2
	Yes	242	96.8
	Total	250	100.0

TABLE: 2.57 Mothers' Anxiety about Child's Growth and Health

In the table 2.57 above, column N shares the responses of parents' worry/anxiety regarding their child's growth and health in the 4 states namely Delhi, Bihar, Jharkhand and UP. After comparing the data responses across these all states, the data depicts that a significant majority of parents express concern about their child's growth and health, where Jharkhand leads the way with a percentage of 96.8. UP, Bihar and Delhi follow with a percentage of 89.2%, 87.2% and

68.4% respectively. In contrast, Delhi stands out as the state where parents are not worried about their child's growth and health, with a percentage of 31.6%. Conversely, Jharkhand has the lowest percentage of parents who are not worried, at 3.2%.

State	worry and anxiety of parents for the feeding and eating of the child	Frequency	Percentage
Delhi	No	146	58.4
	Yes	104	41.6
	Total	250	100.0
UP	No	95	38.0
	Yes	155	62
	Total	250	100.0
Bihar	No	69	27.6
	Yes	181	72.4
	Total	250	100.0
Jharkhand	No	46	18.4
	Yes	204	81.6
	Total	250	100.0

Table 2.58 Mothers' Anxiety about Child's Growth and Health

In the table 2.58 above, column N presents the information about worry and anxiety of parents for the feeding and eating of the child in the states namely Delhi, UP, Jharkhand and Bihar, as represented in percentage.Upon comparison of data across these states, the data showcases that parent in Jharkhand worries more about the feeding and eating of the child with a percentage of 81.6%, while for the same it is lowest in Delhi at 41.6%. In contrast, Delhi leads the category where parents are not worried about the feeding and eating of the child with a percentage of 58.4%. UP, Bihar and Jharkhand follow with percentages of 38%, 27.6% and 18.4% respectively.

Table 2.59 Parents' worry about less weight of child

State	Parents' worry about child's weight	Frequency	Percentage
Delhi	No	170	68.0
	Yes	80	32.0
	Total	250	100.0
UP	No	71	28.4
	Yes	179	71.6
	Total	250	100.0

Bihar	No	123	49.2
	Yes	127	50.8
	Total	250	100.0
Jharkhand	No	81	32.4
	Yes	169	67.6
	Total	250	100.0

Frequency of the table 2.59 above provides insights about the parents worry and anxiety about the less weight of the child in the states namely Delhi, Bihar, UP and Jharkhand. When the data of all four states were analyzed, it is seen that mostly the parents from Uttar Pradesh are worried about the less weight of the child, whereas the parents from Delhi appear not worried or anxious about the less weight of their child. This data highlights the differing levels of parental anxiety about their child's weight in these states, with Uttar Pradesh showing higher levels of concern and Delhi exhibiting lower levels of worry in this regard.

State	Parents worry about child's less height	Frequency (N)	Percentage
Delhi	No	195	78
	Yes	55	22
	Total	250	100
UP	No	94	37.6
	Yes	156	62.4
	Total	250	100
Bihar	No	155	62
	Yes	95	38
	Total	250	100
Jharkhand	No	91	36.4
	Yes	159	63.6
	Total	250	100

Table 2.60 Parents' worry about less height of child

Column N of the table 2.60 above provides insights about the parents worry and anxiety about the less height of the child in the states namely Delhi, Bihar, UP and Jharkhand. Upon analyzing the data from these states, the data displays a pattern where it shows that parents from Jharkhand express a high level of worry and anxiety regarding the less height of their child with a percentage of 63.6%. Following closely is Uttar Pradesh, with 62.4% of parents sharing these concerns. In contrast, the parents from Delhi appear relatively least worried and anxious

regarding the less height of their child with a significant percentage of 78%, followed by Bihar with a percentage of 62.4%.

State	Parents' worry about	Frequency (N)	Percentage	
	child's deformed			
	bones			
Delhi	No	250	100.0	
	Yes	0	0.0	
	Total	250	100.0	
UP	No	163	65.2	
	Yes	87	34.8	
	Total	250	100.0	
Bihar	No	171	68.4	
	Yes	79	31.6	
	Total	250	100.0	
Jharkhand	No	155	62.0	
	Yes	95	38.0	
	Total	250	100.0	

Table 2.61 Parents' worry about deformed bones of child

In the table 2.61 above, Column N shows the worry and anxiety of parents regarding the deformed bones of their child in the states namely Delhi, Jharkhand, UP and Bihar. Upon comparison of data across all the states, it is seen that Delhi stands out as the only where parents express no anxiety or worry regarding the deformed bones of their child with percentage of 100 and Bihar, UP and Jharkhand follow with a percentage of 68.4%, 65.2% and 62% respectively. In contrast, data displays that parents from Jharkhand are concerned more about the deformed bones of their child, whereas Delhi falls in this category with 0 percent.

After comparing the data from all the states, it displays that majority of parents in all states didn't express the patchy skin with Delhi leading the category at 99.6%, while followed by Jharkhand, UP & Bihar with 85.2%, 76.8% & 70% respectively.

Upon comparison of data, it reveals that parents of UP express more concern and anxiety regarding the activeness of their child with a percentage of 64 %, while the parents of Delhi show least concern and anxiety, accounting for only14.8%.

b) Effect of malnutrition on child development milestones:

It is a well-established fact the malnutrition not only affects the health status of the child but also the age-appropriate child development milestones. Malnutrition can have significant and longlasting effects on various domains of development in individuals, particularly in children. These domains of development include physical, cognitive, emotional, and social development. The CDPOs are of the view that it has impact on physical and mental development of the brain, child may suffer from brain hypoxia, children have weak memory, low immunity and children suffer from stunting, wasting, and cognitive development. Next, they also opined that adulterated food could affect the children's health and nutrition status. It also affects the brain cells and development process of children because it causes many stomach diseases or children get sick easily. Some problems with adulterated food are digestion process, increase risk in diseases and directly impact on child development.

Regarding the effect of malnutrition on developmental milestones the mothers were responded that the most overt signs of malnutrition are visible in physical/motor development, language development and cognitive development while very less mothers spoke about lag in socio emotional development. The milestones related to each domain that mothers pointed out include low eye hand coordination, lack of interest in sequencing activities, lag in standing erect, walking without support, motor milestones like catching a ball and climbing down the stairs, speech delays and maintain a conversation especially with strangers.

The majority of nutrition experts said adulterated food is harmful to malnutrition children as well as normal children. Adulterated food can affect the children's health and nutrition status. It also affects the brain cells and development process of children because it causes many stomach diseases or children get sick easily. Some problems with adulterated food are digestion process, increase risk in diseases and directly impact on child development. Contaminated food is dangerous to the children's health and development. According to nutrition experts, there are many diseases that come from contaminated food. They directly affect the nutrition and development process of children. The effect of contaminated food is on digestive system, immunity, cognitive and physical development and may also result in liver and bowel movements. All this can result in stunting, wasting and high morbidity.

Table 2.62 Correlations between dependent and independent variables

Correlation	Sig. (2-tailed)	N
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			coefficient		
Source of	Rate	of falling	042	.232	823
Drinking water	ill				

Nonparametric relation was computed between the different variables, from above table it can be said that relation with Source of drinking water with rate of falling ill. Relation comes out and shows negatively impact on rate of falling ill with the source of drinking water.

Correlation coefficient Sig. (2-tailed) Ν Nutritional status mention on Health Card Types of family .508 1000 .021 Total household -.124** .000 1002 income 996 Child Age -.057 .074 Not provide essential .014 .657 1000 food Child throw tantrums .057 .070 1000 in having home cooked food -.120** .000 1000 The child watches TV/Mobile phone while eating think this .051 1002 Do you .062 effect the child's eating behavior

Table 2.63 Correlation between dependent and independent variables

Above table 2.63 using non parametric test to find out the relation between variables, it can be said that the relationship between nutritional status mention on health card and type of family, total household income, child age, not provide essential food, child throw tantrums in having home cooked food, child watches tv/mobile phone while eating, covid patient in the family and precautions with respect to drinking water shows that negatively associated.

Interpreting specific entries from the table, we find that total household income displays a negative correlation coefficient of -0.124 with nutritional status, implying that as household income rises, the child's nutritional status tends to decrease. This negative relationship is statistically significant, indicated by the significance level of .000. In contrast, child age shows a weak negative correlation coefficient of -0.057 with nutritional status, which is not statistically significant at the conventional 0.05 threshold. Similarly, the child watching TV or using a mobile

phone while eating exhibits a negative correlation coefficient of -0.120 with nutritional status, statistically significant at the 0.05 level. Lastly, the belief that this behavior affects the child's eating behavior displays a positive correlation coefficient of 0.062 with nutritional status, suggesting an association with better nutritional status, though not statistically significant at the 0.05 threshold with a significance level of .051.

		Correlation	Sig. (2-tailed)	Ν
		Coefficient		
If did not	Total household	.091**	.004	1000
breastfeed at all,	income			
what did you	Income from all	.116**	.000	984
give the child to	Sources			
feed in the first	Nutritional	129**	.000	1000
four months	Status mentioned			
	on Health Card			

Table 2.64 Correlation between dependent and independent variables

For instance, regarding the feeding practices during the first four months, if the child was not breastfed at all, the table reveals correlations with other factors. Total household income displays a positive correlation coefficient of 0.091 with this feeding practice, indicating that higher household income is associated with a higher likelihood of not breastfeeding the child. This relationship is statistically significant, as evidenced by the significance level of 0.004. Similarly, income from all sources exhibits a stronger positive correlation coefficient of 0.116, also statistically significant at the 0.05 level. On the other hand, the mention of nutritional status on the health card shows a negative correlation coefficient of -0.129 with the absence of breastfeeding, suggesting that when the child's nutritional status is documented, there is a tendency for breastfeeding to be less prevalent. This negative relationship is statistically significant level of 0.000. These findings underscore the complex interplay between socioeconomic factors and feeding practices during infancy, highlighting the importance of considering various contextual factors when assessing infant nutrition and caregiving practices.

Table 2.65 Correlation between dependent variables and independent variable

Conclution Sig. (2-tailed)		Correlation	Sig. (2-tailed)	Ν
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	Coefficient		
	What is your religion	n	
Which caste do you belong to	.119**	.000	972
Total household income	118**	.000	998
BPL card	041	.198	998
Sex Male and female	.018	.566	997
Overall health perception of child	019	.562	984
Current height	.079	.013	998
Nutritional status mentioned on	.232*	.000	998
health card			
Child Immunization status on	.214**	.000	998
Child's health card			
Worry or anxiety about your Childs	.069*	.028	998
growth and health			
Have you done something to	.030	.351	998
address your worries			
If the child has not done anything in	069*	.029	998
the above mentioned, what did you			
do?			

Table 2.66Correlation between dependent and independent variables

	Correlation	Sig. (2-tailed)	N
	Coefficient		
	Which caste do you	belong to	
What is your religion	.119**	.000	972
Which caste do you belong to	1.000		974
Total household income	.123**	.000	974
BPL card	.109**	.001	974
Sex (male and female)	.052	.106	973
Overall health perception of child	.100**	.002	961
Current height	.151**	.000	974
Nutritional status mentioned on	104*	.001	974
health card			
Child Immunization status on	.041	.205	974
Child's health card			
Worry or anxiety about your Childs	120**	.000	974
growth and health			
Have you done something to	041	.206	974
address your worries			
If the child has not done anything in	102**	.001	974
the above mention what did you do?			

	Correlation	Sig. (2-tailed)	N
	Coefficient		
	Total Household Inc	come	
What is your religion	118	.000	998
Which cars do you belong to	.123**	.000	974
Total household income	1.000		1004
BPL card	020	.521	1000
Sex Male and female	009	.784	999
Overall health perception of child	.053	.094	986
Current height	.176**	.000	1002
Nutritional status mentioned on	124*	.000	1002
health card			
Child Immunization status on	124**	.000	1002
Child's health card			
Worry or anxiety about your Childs	097**	.002	1000
growth and health			
Have you done something to	.042	.186	1000
address your worries			
If the child has not done anything in	044	.163	1000
the above mention what did you do?			

 Table 2.67 Correlation between dependent and independent variables

Table 2.68 Correlation between dependent and independent variables

	Correlation	Sig. (2-tailed)	N
	Coefficient		
	BPL Card		
Which cars do you belong to	.109**	.001	974
Total household income	020	.521	1000
BPL card	1.000		1000
Sex Male and female	.048	.130	999
Overall health perception of child	.023	.478	986
Current height	.081*	.011	1000
Nutritional status mentioned on	.144*	.000	1000
health card			
Child Immunization status on	013	.684	1000
Child's health card			
Worry or anxiety about your Childs	.027	.393	1000
growth and health			
Have you done something to	.129**	.000	1000
address your worries			

If the child has not done anything in	086**	.007	1000
the abovementioned what did you			
do?			

Table 2.69 Correlation between dependent and independent variables

	Correlation Coefficient	Sig. (2-tailed)	N
	Sex Male & Female		<u> </u>
What is your religion	.018	.566	997
Which caste do you belong to	.052	.106	973
Total household Income	009	.784	999
BPL Card	.048	.130	999
Sex of male and female	1.000		999
Overall health perception of child	.051	.112	985
Current Height	026	.412	999
Nutritional Status mentioned on	014	.667	999
Health Card			
Child Immunization status on	012	.695	999
Child's health card			
Worry or anxiety about your Childs	055	.084	999
growth and health			
Have you done something to	026	.415	999
address your worries			
If the child has not done anything	.003	.920	999
in the abovementioned, what did			
you do?			

Above table using non parametric relation test to find out the relationship between religion, caste, total household income, bpl card, sex, overall health perception of child, current height, nutritional status mentioned on health card, child immunization status on child's health card, worry or anxiety about your child's growth and health, have you done something to address your worries, if the child has not done anything in the above mention what did you do and the results comes out it shows negatively impact on household income, bpl card users, health perception of child, current height, and if child not done anything to address their worries what they did.

Table 2.70Correlation between dependent and independent variables

Child Immunization status on Child's health Card(Independent variable)			
Dependent variables	Correlation Coefficient		
Types of family	.021		

Total household income	0124**
Age of child	.057
Reason why essential nutrition not provided	.014
Child throw tantrums in having home	.057
cooked food	
Does the child watches TV/Mobile phone	0120**
while eating	
Do you think this effect the child's eating	.062
behavior Increase food consumption during	
watching TV/Mobile	
Anyone in your family suffered Covid	021
precautions with respect to drinking water	130**
	1.000
Child Immunization status on Child's health	
Card	

The provided table 2.69 presents correlation coefficients between various factors and the child's immunization status as recorded on the child's health card. The correlation coefficient signifies the strength and direction of the relationship between each factor and the child's immunization status, with positive coefficients indicating a positive relationship and negative coefficients suggesting a negative relationship. Notably, a correlation coefficient of 1.000 indicates a perfect positive correlation, implying that the child's immunization status perfectly correlates with itself, as expected.

Examining the correlations, several factors show varying degrees of association with the child's immunization status. For instance, the type of family exhibits a minimal positive correlation coefficient of 0.021, suggesting a weak positive relationship, though not statistically significant. Conversely, total household income demonstrates a moderate negative correlation coefficient of -0.124, signifying a negative relationship between higher household income and the child's immunization status. This negative correlation is statistically significant, highlighting its importance. Additionally, the child's age displays a positive correlation coefficient of 0.057, indicating a modest positive relationship with immunization status, although not statistically significant.

Further, behaviors such as watching TV or using a mobile phone while eating reveal a notable negative correlation coefficient of -0.0120, suggesting a negative association with the child's immunization status. Similarly, precautions with respect to drinking water exhibit a more

substantial negative correlation coefficient of -0.0130, indicating a stronger negative relationship with immunization status, and this correlation is statistically significant.

Overall, while some factors show weaker associations, such as the type of family and the child's age, others, such as household income and behaviors related to eating and water consumption, demonstrate more robust correlations with the child's immunization status. These findings underscore the importance of considering various socio-economic and behavioral factors when assessing and promoting child immunization coverage, contributing to informed decision-making and public health interventions.

Key findings and Conclusion

It is observed that majority of mothers in all states breastfeed their child, where UP leads the category with a percentage of 96.8%. Delhi stands at last with a percentage of 92.4% however percentage of feeding of colostrum.

Although the percentage of mothers feeding formula milk is less, it is due to low family income. Has their family income been high they would have easily been given glorified formula milk. An appreciable number of mothers across the states report introducing semi solid food to their infants at around 7-8 months. The WHO guidelines say that it should be done at 6 months as the child's requirements aren't met only by breastfeeding at that time. Hence if the semi solids are introduced later then definitely it will contribute to malnutrition.

It is important to emphasize a balanced diet as mothers in Delhi and UP are found to give Roti/ flat bread and vegetables while in Bihar and Jharkhand focus exclusively on rice. So, balance of nutrients is disturbed. Nearly all the mothers agreed that the child likes junk food like bread, ice cream, soft drinks, chips, biscuits, and toffees. Inclusion of packaged food with preservatives isn't suitable at an early age.

A majority of mothers highlight that the habit of watching TV/ mobile while eating causes the dependency of child on TV/mobile, where Delhi leads the category. A sizeable number of mothers believe this habit has decreased their food consumption. That's why watching mobile shouldn't be allowed to children.

It is important that meal habits as adults i.e. the practice of having breakfast, lunch, and dinner along with snacks/ small eats should be formed in the preschool age. A lot of mothers said that the child does not eat in this fashion. Hence the child becomes deficient in nutrients.

A lot of mothers think that "good quality food" means expansive food like ghee and dry fruits only which can be brought by increased family income so there is a crucial need to educate them about importance of seasonal fruits and vegetables, low-cost food like jaggery, black chana, millets and *daliya*. A lot of mothers especially in UP, Bihar and Jharkhand reveal that their lower age at the time childbirth also affected the child's nutrition because they couldn't give nutritious food because of lack of knowledge, couldn't manage nutrition pattern especially in the first-born child and couldn't give variety of food to the child.

A small number of mothers admitted that due to less spacing they could pay less attention to their children's nutrition. Hence this could be included in the adolescent and mothers counselling. Gender discriminatory nutrition practices though are found less in Delhi, UP and Bihar but are more in Jharkhand which argues for gender sensitive nutrition practices.

Proper WASH practices like precautions for handling drinking water (no precaution was found in 96.4% cases in Jharkhand), hand hygiene before and after meals and after using toilet (half of the respondents aren't doing it), washing raw vegetables and covering of cooked food is also found less. This can be included in Mahila Mandal discussion.

In the discussion above the prevalence and its associated causative factors are investigated. As a result of the argument presented it can be concluded that the major factors Nutrition practices, Familial factors, and their impact on nutrition, drinking water and food related factors, Hygiene and sanitation related practices as factors affecting nutrition of children, Mother's autonomy as a factor of malnutrition and Lack of provisions at AWCs.

Within nutrition practices at home breastfeeding, weaning/ introduction of semi-solid foods, variety in food generally taken at home and at AWC, effect of junk food on children and effect of watching mobile while eating are the major factors that are explored.

After using nonparametric test with different variables, the relations between breastfeed with the Total Household Income, Income from all Sources and Nutritional Status mentioned on Health Card. Results come out and it negatively shows relation with Nutritional Status mentioned on
Health Card and positively relation with other variables. The results suggest that Nutritional status of child is inversely correlated to total household income, child watching TV/ mobile, and no precautions related to drinking water.

Next, perception about impact of their rural/ urban residence, family income, family type, lower age at childbirth, lower educational attainment, spacing between children, birth order of the child, gender of the child as factors affecting malnutrition are discussed which have given new insights to the study.

WASH factors like source of drinking water, Hygiene, and sanitation related factors like type of toilet facility, precautions taken by mothers and children after using toilet and bathing practices are discussed at length. Nonparametric relation was computed between the different variables relation comes out and shows negatively impact on rate of falling ill with the source of drinking water. Next, the Child Immunization status on Child's health Card was negatively associated with Total Household Income and precautions with respect to drinking water, and positively related with b158. These relationships between the variables were found statistically significant. It means lower will be the Child Immunization status on Child's health Card lower will be the Total Household Income, child watches TV/Mobile phone while eating, precautions with respect to drinking water and positive relationship between Child Immunization status on Child's health Card lower will be the Ard and Do you think this effect the child's eating behavior Increase food consumption during watching TV/Mobile reveals that higher will be the b27 Child Immunization status on Child's health Card higher will be the effect the child's eating behavior Increase food consumption during watching TV/Mobile.

The other factors of malnutrition that are found important in the study are mother's autonomy, lack of provisions at the AWC. Lastly the Impact of malnutrition on child health (short term effects) and it's and long-term development outcomes are explored.

Chapter3

CHALLENGES AND NOTEWORTHY PRACTICES

Content of the chapter

- To Study the challenges and noteworthy practices (both at home and at AWC) among young children
- Noteworthy practices at home
- Noteworthy practices at AWC
- Challenges at home
- Challenges at AWC
- Noteworthy practices at home
- Noteworthy practices at AWC
- Noteworthy practices at AWC from the AWW perspective
- Challenges at AWC from the Supervisor's perspective
- Results of data analysis regarding the relationship between Independent and dependent Variables
- Major Findings and discussion from the results of the data analyzed related to noteworthy practices and challenges at home and AWW
- Nutrition Expert among these 4 states said that exclusive and continued breastfeeding
- Conclusion

Undernutrition is directly related to inadequate dietary intake and infectious diseases and is influenced by three broad factors: food, health, and care. Optimal nutritional status results when children and families have access to foods that are conducive to a healthy diet and meet dietary needs (e.g. sufficient, safe, and nutritious); appropriate maternal and childcare practices; adequate health services; and a healthy environment, including safe water, sanitation, and good hygiene practices. The interaction between undernutrition and infection (particularly diarrheal diseases) creates a potentially vicious cycle of worsening illness and deteriorating nutritional status. The resources available in a society (human, financial, physical) and how they are used (social, economic, political, and cultural) constitute the basic causes of undernutrition.

Increasing evidence suggests that water, sanitation, and hygiene (WASH) practices affect linear growth in early childhood. Many studies determined the association between household access to water, sanitation, and personal hygiene practices with stunting among children.

The caregiver's self-reported practices of washing hands with soap before meals or after defecation were inversely associated with child stunting. However, the inverse association between reported personal hygiene practices and stunting was stronger among households with access to toilet facility or piped water. Improved conditions of sanitation and hygiene practices are associated with reduced prevalence of stunting in rural India. Policies and programming aiming to address child stunting should encompass WASH interventions, thus shifting the emphasis from nutrition-specific to nutrition-sensitive programming.

The study titled, "child-sensitive water, sanitation, and hygiene composite score and its association with child nutritional outcomes in St. Martin's Island, Bangladesh" found that improved WASH practices were positively associated with the height-for-age and weight-for-age which implies that in the improved WASH group, the *z*-score of height-for-age and weight-for-age was greater than in the unimproved group.

WASH offers a possible solution to Child growth failures in many countries, and its global importance is recognized in the Sustainable Development Goal (SDG) 6. WASH may reduce CGF in three ways: by reducing the incidence of diarrheal disease; by preventing intestinal worm infection that contributes to inadequate absorption of nutrients and by reducing the pathogen load in the environments because of poor WASH condition. Despite the potential benefits of WASH, few studies have investigated the association of inadequate WASH with Child growth failures compared with diarrhea and soil-transmitted helminths infections. The paucity of evidence on the effect of WASH services on child growth is argued to be because of relatively low priority given to WASH research among medical researchers.

There has been a growing interest in better understanding and measuring the effect of WASH on nutritional outcomes, and new research results provide insights into the relationship.

Observational studies have found associations between the frequency of open defecation and prevalence of stunting. An analysis of data from 140 demographic and health surveys (DHS) in 65 countries reported that over half of the variation in average child height between countries was explained by the frequency of open defecation (Spears, Gosh & Cumming, 2013). Another analysis of 171 surveys in 70 low- and middle-income countries found that increasing access to and use of improved sanitation and improved water sources reduced the risk of stunting (Fink, Gunther & Hill, 2011). In a cluster randomized trial of 121 villages in Mali, children in communities that reduced open defecation through the community-led total sanitation (CLTS) approach suffered comparatively less stunting than comparison villages (Alzua et al., 2015). Only a few rigorous study designs (i.e. randomized controlled trials) have been employed to measure the effect of WASH on nutritional outcomes. A Cochrane review identified five cluster randomized controlled trials to measure the effect of WASH interventions on nutritional status (Dangour et al., 2013). These five studies, conducted in low-income settings, found evidence for a small, but statistically significant, effect of WASH interventions on stunting. The interventions were limited to water quality and/or hygiene and were of short duration, and no study considered the effect of a complete package of WASH interventions (Du Preez, McGuigan & Conroy, 2010; Du Preez et al., 2011). Whereas the Cochrane review suggests that WASH interventions can improve nutritional status, several large studies have recently been completed or are under way in Africa and Asia that will provide more robust evidence on how and by how much different WASH interventions influence nutritional outcomes and identify the most effective ways of linking WASH with nutrition interventions. As indicated above, the evidence regarding the gains associated with integrating WASH with nutrition efforts is growing. The policy basis for such commonsense preventive health efforts is also strong and growing.

Nutrition-specific interventions address the most immediate causes of undernutrition. These interventions are supported by evidence and are detailed in several nutrition packages, including WHO's Essential Nutrition Actions (WHO, 2013a) and UNICEF's Infant and Young Child Feeding (IYCF) Programming Guide (UNICEF, 2011). These approaches focus on the most critical period of human development – the first 1000 days from conception to a child's second

birthday. However, the 2013 Lancet series on maternal and child nutrition estimated that achieving 90% coverage with a package of 10 nutrition-specific interventions would reduce the prevalence of stunting by only 20% (Bhutta et al., 2013). Reducing and ultimately eliminating undernutrition therefore requires effective implementation of nutrition-specific and complementary nutrition-sensitive interventions addressing the underlying and basic causes of undernutrition – including improving WASH.

Lack of access to WASH can affect a child's nutritional status in many ways. Existing evidence supports at least three direct pathways: via diarrhoeal diseases, intestinal parasite infections and environmental enteropathy. WASH may also impact nutritional status indirectly by necessitating walking long distances in search of water and sanitation facilities and diverting a mother's time away from childcare (Fenn et al., 2012).

Effectively and sustainably improving nutrition outcomes requires a coordinated, multisectoral approach among the health, water, sanitation, and hygiene (WASH) and strong community engagement.

Integrating WASH interventions into nutrition actions can make a difference. In the dawn of a new era of post-2015 Sustainable Development Goals, which highlight multisectoral engagement, the time is ripe to demonstrate, practically, how nutrition and WASH actions can be integrated, for better health and the betterment of humanity.

The present study aimed to identify the Challenges and noteworthy practices among young children both at home and Anganwadi centres. Towards this, the items from different tools (Mothers, AWWs, Supervisors) related to challenges and noteworthy practices were identified. The data was collected from the four Northern states of India, viz., Delhi, Bihar, Uttar Pradesh, and Jharkhand. The data obtained on administering the tools in all the four states was analyzed using SPSS. The results of the data analysis in the form of frequencies and percentages were obtained.

The results of the data analysis related to the Challenges and noteworthy practices among young children both at home and Anganwadi centres are discussed in the given below sections.

Results of Data Analysis

To analyze data, the items related to noteworthy practices at home and Challenges at home are identified from the mother's tool. Similarly, for the purpose of data analysis, the items related to noteworthy practices at AWC and Challenges at AWC are identified from the AWW, Supervisor's tools also.

Data analysis of the items related to challenges and noteworthy practices at home and at AWCs obtained from the mothers, AWWs, Supervisors tools is divided into:

1) Noteworthy practices at home and at AWC

2) Challenges at home and at AWC

To get an in-depth understanding of the results of the data analysis the Chapter is divided into the following sections:

Section I. Noteworthy practices at home

Section II. Noteworthy practices at AWC

Section III. Challenges at home

Section IV Challenges at AWC

Section I Noteworthy practices at home

a) The first milk fed to the children

Table 3.1 The first milk fed to the children

State	ITEM	Response	Frequency	Percentage
			Ν	
Delhi	The first milk fed to the	No	9	3.6
	children	response		
		Yes	14	5.6
		No	227	90.8
		Total	250	100.0
Uttar Pradesh	The first milk fed to the	No	10	4.0
	children	response		

		Yes	19	7.7
		No	221	88.4
		Total	250	100.0
Bihar	The first milk fed to the	No	5	2.0
	children	response		
		Yes	32	12.8
		No	213	85.2
		Total	250	100
Jharkhand	The first milk fed to the	No	7	2.8
	children	response		
		Yes	15	6.0
		No	228	91.2
		Total	250	100

In the column N of table 3.1, it displays the data who feed first milk to their child in the states of Delhi, Bihar, Jharkhand and UP. When the data of all these states were analysed, it highlights that majority of mothers from all states feed their first milk to their child and Jharkhand leads this category with percentage of 91.2%, and lowest in the Bihar at a percentage of 85.2%. the colostrum is primary not fed because it is considered stale our impure and is seen against the family tradition.

State	Question raised	Response	Frequency	Percentage
Delhi	Alternations made in the	Blank/	229	91.6
	daily feeding routine of the	No		
	child during	response		
	lockdown/pandemic	Food was	16	6.4
		cooked		
		once a day		
		and same		
		food is		
		served		
		every time		
		Children	1	0.4
		were only		
		adult like		
		food and		
		not any		
		special		
		waring diet		

 Table 3.2 Alternations made in the daily feeding routine of the child during lockdown/pandemic

		Any other	4	1.6
		Total	250	100.0
Uttar	Alternations made in the	Blank/	149	59.6
Pradesh	daily feeding routine of the	No		
	child during	response		
	lockdown/pandemic	Food was	72	28.8
		cooked		
		once a day		
		and same		
		food is		
		served		
		every time		
		Children	25	10.0
		were only		
		adult like		
		food and		
		not any		
		special		
		waring diet		
		Any other	4	1.6
		Total	250	100.0
Bihar	Alternations made in the	Blank/	158	63.2
	daily feeding routine of the	No		
	child during	response	()	
	lockdown/pandenne	Food was	69	27.6
		cooked		
		once a day		
		and same		
		IOOD IS		
		served		
		Children	10	4.0
		Unificient were only	10	4.0
		adult like		
		food and		
		not any		
		special		
		waring diet		
		Any other	13	5.2
		Total	250	100.0
Jharkhand	Alternations made in the	Blank/	107	42.8
	daily feeding routine of the	No		
	child during	response		
	lockdown/pandemic	Food was	94	37.6

cooked		
once a day		
and same		
food is		
served		
every time		
Children	42	16.8
were only		
adult like		
food and		
not any		
special		
waring diet		
Any other	7	2.8
Total	250	100.0

The table 3.2 depicts the percentage of responses regarding alternations made in the daily feeding routine of the child during lockdown/pandemic. The responses were collected from Delhi, Jharkhand, UP and Bihar. Upon analysing the data across these states, it reveals that food was cooked once in a day, where Jharkhand leads the category at a percentage of 37.6%, while it was followed UP, Bihar and Delhi with a percentage of 28.8%, 27.6% and 6.4%. It is worth noting that majority of the respondents opt for the "can't say" option, where Delhi has a highest percentage of 90% and while Jharkhand stands at last with a percentage of 42.8%.

State	Question	Response	Frequency	Percentage
	raised			
Delhi	child throw	Yes	157	62.8
	tantrums in	No	89	35.6
	having home	Cannot say	4	1.6
	cooked food	anything		
		Total	250	100.0
Uttar	child throw	Yes	151	60.4
Pradesh	tantrums in	No	98	39.2
	having home	Cannot say	1	0.4
	cooked food	anything		
		Total	250	100.0
Bihar	child throw	Yes	148	59.2
	tantrums in	No	95	38.0
	having home	Cannot say	7	2.8

Table 3.3 Child throw tantrums in having home cooked food

	cooked food	anything		
		Total	250	100.0
Jharkhand	child throw	Yes	130	52.0
	tantrums in	No	119	47.6
	having home	Cannot say	1	0.4
	cooked food	anything		
		Total	250	100.0

Above table 3.3 shows that percentage of the child throw tantrums in having home cooked food. Since by thronging tantrums children are losing the good nutrient of the home cooked food so becomes an important challenge to the nutrient's practices at home. In the present stud it is found that majority (50 to 60 mothers in all state) of mothers admitted the fact that their children through tantrums while eating home coked food.

II. Noteworthy practices at AWC

A. Noteworthy practices at AWC from the AWW perspective

Since drinking water availability, quality, storage, and accessibility are precursors for avoiding communicable disease and hence directly affect the rate of falling ill of children in the AWCs. In the initial tables the status of drinking water at the AWCs is discussed. It may be noted that the AWC data from Bihar is not available.

Availability of drinking water					
State			Frequency	Percent	
		Yes	45	90.0	
Delhi		No	5	10.0	
		Total	50	100.0	
		Yes	30	60.0	
U.P.	drinking water	No	20	40.0	
		Total	50	100.0	
		Yes	21	41.2	
Jharkhand		No	30	58.8	
		Total	51	100.0	

Table 3.4 Availability of drinking water

The data above denotes the availability of drinking water at the AWC. It can clearly be seen that out of the three states, Delhi is showing the most promising picture with water availability at 90% of the Anganwadi centres (AWC). After Delhi comes U.P. with 60% drinking water whereas Jharkhand shows drinking water availability at only 41.2%. In the next table the types of

sources of water are discussed which explains how AWCs are managing without continuous water supply.

Source of drinking water at AWC					
State			Frequency	Percent	
		tap within the premises	40	80.0	
		public tap	1	2.0	
		hand pump within the	1	2.0	
		premises	1	2.0	
Delhi		tube well or bore well	1	2.0	
		within the premises	1	2.0	
		bottled water	3	6.0	
		any other	4	8.0	
		Total	50	100.0	
	Source of drinking water at AWC	tap within the premises	18	36.0	
		public tap	3	6.0	
		neighbor's tap	5	10.0	
		hand pump within the	10	20.0	
		premises	10	20.0	
UP		neighbor's hand pump	2	4.0	
		public hand pump	9	18.0	
		tube well or bore well	2	4.0	
		within the premises	2	4.0	
		any other	1	2.0	
		Total	50	100.0	
		tap within the premises	17	33.3	
		public tap	20	39.2	
		hand pump within the	6	11.8	
Iberkhand		premises	0	11.0	
JIIAI KIIAIIU		neighbor's hand pump	3	5.9	
		public hand pump	2	3.9	
		well in premises	3	5.9	
		Total	51	100.0	

Table 3.5Source of drinking water at AWC

Total 51 100.0 The table 3.5 above represents the source of drinking water at AWCs which ranges from tap, hand pump, tube well/ bore well to bottled water also. It is encouraging to note that in the state of Delhi 80% of AWCs have a tap with government water supply within their premises and only a few depend on public taps, hand pump and bottled water. In the state of Uttar Pradesh 36% of AWCs have tap within their premises whereas a large majority rely on hand pumps which include hand pump within premises (20%) and public hand pump (18%). A small minority with no water supply relies on neighbor's tap and tube well (2% each). Lastly in Jharkhand many AWCs depend on public taps (39%) for their water consumption and 33% of AWCs have taps within their premises. As many as 12% of the AWCs have hand pump within their premises while a small minority (6%) still have well in their premises.

Quality of drinking water					
State			Frequency	Percent	
		average	22	44.0	
Delhi		good	28	56.0	
		Total	50	100.0	
		good	10	20.0	
UP	Quality of drinking water	average	26	52.0	
		poor	14	28.0	
		Total	50	100.0	
		good	37	25.5	
Jharkhand		average	13	72.5	
		poor	1	2.0	
		Total	51	100.0	

Table 3.6Quality of drinking water

Next, quality of drinking water available at the AWCs was evaluated using a litmus strip which categorizes water quality in good, average, and poor. The result shows that 56% of AWCs show good quality drinking water and 44% show average quality drinking water. The state of drinking water is mainly average (52%) in the U.P. and more than a quarter shows poor quality drinking water and only 20% reports good quality drinking water.

AWW promotes good sanitation behavior and practices among children					
	State		Frequency	Percent	
		can't say	1	2.0	
Dalhi	AWW promotes	actively promoted	44	88.0	
beini good sanitation behavior	good sanitation	promoted occasionally	5	10.0	
	behavior	Total	50	100.0	
	and practices	actively promoted	30	60.0	
UP	among children	promoted occasionally	19	38.0	
		not promoted	1	2.0	

Table 3.7 AWW promotes good sanitation behavior and practices among children

		Total	50	100.0	
Jharkhand	actively	40	78.4		
	promoted				
	promoted	10	19.6		
		occasionally	10	17.0	
		not promoted	1	2.0	
		Total	51	100.0	

Regarding sanitation behavior a vast majority (88%) of AWWs in Delhi report that promote it actively while only 10% say that sanitation practices are promoted occasionally. Similarly, 78% of AWWs in Jharkhand report that they promote sanitation behavior among children actively and only 19.6% say that they promote sanitation behavior occasionally. In U.P. 60% of AWCs say that they actively promote sanitation behavior among children while 38% reports of occasionally promoting it.

Availability of toilet facility with water for flush				
	State		Frequency	Percent
		can't say	1	2.0
		available and		
		satisfactory/		
		flush is	15	00.0
		working/	45	90.0
		adequate		
		water		
		not		
Delhi	Availability of toilet	satisfactory/	3	6.0
		flush is not		
		working		
	facility with	properly/ no		
	water for flush	water		
		not available/		
		available but	1	2.0
		blocked		
		Total	50	100.0
		available and		
ΙΤΡ		satisfactory/	18	
		flush is		36.0
		working/		50.0
		adequate		
		water		

Table 3.8 Availability of toilet facility with water for flush

	not satisfactory/ flush is not working properly/ no water	9	18.0
	not available/ available but blocked	23	46.0
	Total	50	100.0
	can't say	1	2.0
	available and satisfactory/ flush is working/ adequate water	20	39.2
Jharkhand	not satisfactory/ flush is not working properly/ no water	8	15.7
	not available/ available but blocked	22	43.1
	Total	51	100.0

The toilet facility is available with water for flush in 90% of the cases in Delhi, only 6% reports of unsatisfactory toilet facility and 2% doesn't report of any facility. Jharkhand generally reports toilet facility with water for flush less frequently available. Thirty nine percent show the availability of toilet facility while 15.7% report unsatisfactory toilet facility and a huge percentage of cases i.e. 43% confess that they don't have any toilet facility. In the U.P. proper toilet facility is seen only 36% of the time, 18% of cases report unsatisfactory toilet facility and vast cases (43%) report that there is no toilet facility available at the AWC.

Table 3.9 Facility of cleaning oneself after defecation

Facility of cleaning oneself after defecation			
State	Response	Frequency	Percent

	yes	47	94.0
Delhi	no	3	6.0
	Total	50	100.0
	yes	23	46.0
UP	no	27	54.0
	Total	50	100.0
	yes	31	60.8
Jharkhand	no	19	37.3
	Total	51	100.0

The facility of cleaning oneself using water after defecation is quite high in Delhi and is seen 94% of the time in Delhi whereas in Jharkhand this facility is present only 60.8% of the time and 37.3% show no facility of cleaning oneself after defecation. In the state of the U.P. it is surprising to note that the washing facility in the toilet is available in 46% of cases and as high as 54% of AWWs report having no facility of washing after defecation.

Cleanliness and hygiene in the toilet				
State			Frequency	Percent
		can't say	2	4.0
Delhi		Yes	46	92.0
		No	2	4.0
		Total	50	100.0
	Cleanlinear	can't say	1	2.0
UP	and hygiene in the toilet	Yes	25	50.0
		No	23	46.0
		Total	50	100.0
		can't say	1	2.0
Jharkhand		Yes	34	66.7
		No	16	31.4
		Total	51	100.0

Table 3.10 Cleanliness and hygiene in the toilet

Delhi shows 92% clean toilet in AWCs whereas in Jharkhand 66.7% of toilets are clean and Uttar Pradesh show least percentage of cleanliness of toilet i.e. only 50% and the rest remains unclean and unhygienic for use.

Table 3.11 Alternate arrangements for children if toilet is not available

Alternate arrangements for children If toilet is not available				
	State		Frequency	Percent
Delhi	Alternate			

	arrangements for children If toilet is not available	facility provided by the community/ separate corners provided by the AWW	2	4.0
		go to own nearest house	48	96.0
		Total	50	100.0
		can't say	9	18.0
UP		facility provided by the community/ separate corners provided by the AWW	17	34.0
		go to own nearest house	15	30.0
		go to roadside/ outside the AWC	9	18.0
		Total	50	100.0
		can't say	1	2.0
Jharkhand		facility provided by the community/ separate corners provided by the AWW	23	45.1
		go to own nearest house	13	25.5
		go to roadside/ outside the AWC	14	27.5
		Total	51	100.0

In case the toilet is not available for children within the premises of AWC then the alternate arrangement for children is assessed. In the states of UP and Jharkhand, mostly there are a separate corner provided by the AWW or there are community toilets, if toilet is not available for Children.

Place where children often wash their hands				
	State		Frequency	Percent
		can't say	2	4.0
		water and soap/ ash are available	36	72.0
Delhi		water is available but no soap/ ash	9	18.0
		water and soap/ ash aren't available	3	6.0
		Total	50	100.0
		water and soap/ ash are available	34	68.0
UP	children often wash their hands	water is available but no soap/ ash	13	26.0
		water and soap/ ash aren't available	3	6.0
		Total	50	100.0
		water and soap/ ash are available	37	72.5
Jharkhand		water is available but no soap/ ash	8	15.7
		water and soap/ ash aren't available	6	11.8

Table 3.12 Place where children often wash their hands

Total51100.0On this issue hand washing place with soap or ash is present in Delhi in 72% of cases whereas in18% cases soap isn't available and only in 6% of cases neither water nor soap is available. InJharkhand 72.5% AWWs report having both water and soap for hand washing and 15.7% showonly water and no soap while 11.8% show neither water nor soap for hand washing. In the U.P.the percentages are 68, 26 and 6 for both water and soap, only water and no availability for handwashing respectively.

Availability of dustbin or specific place provided by AWW and				
		its usage		
	State		Frequency	Percent
		available and proper	42	84.0
Delhi		available but partially	4	8.0
		not available	4	8.0
		Total	50	100.0
	Availability	available and proper utilization	21	42.0
UP	of dustbin or specific place provided by AWW and its usage	available but partially used	15	30.0
		not available	14	28.0
		Total	50	100.0
		available and proper utilization	21	41.2
Jharkhand		available but partially used	12	23.5
		not available	18	35.3
		Total	51	100.0

Table 3.13 Availabilit	v of dustbin or s	pecific place	provided by	AWW and	its usage
	y of austoin of s	peeme place	provided by	ILVV VV MIM	its usuge

In Delhi dustbins were available with proper utilization in 84% of the cases. However, the percentage of utilization of dustbins is surprisingly low in the U.P. and Jharkhand i.e. 42% and 41.2% respectively. In as many as 8%, 28% and 35.3% in Delhi, U.P. and Jharkhand the dustbin is not available at AWC. Proper disposal and management of waste is available in only 32%, 38% and 60.8% in Delhi, U.P. and Jharkhand. Else it was not available.

Neatness and tidiness at the AWC				
State		Frequency	Percent	
		yes	38	76.0
Delhi		partially	12	24.0
		Total	50	100.0
UP Ne ti t	Neatness and tidiness at the AWC	yes	32	64.0
		partially	15	30.0
		no	3	6.0
		Total	50	100.0
		yes	44	86.3
Jharkhand		partially	5	9.8
		no	2	3.9
		Total	51	100.0

Table 3.14 Neatness and tidiness at the AWC

General neatness and tidiness are also observed in AWCs, and it can be said with confidence that 76%, 64% and 86% of AWC look clean and tidy in Delhi, U.P. and Jharkhand. Similarly, 24%, 30% and 9.8% of AWCs look partially clean and the rest of them are totally messy in Delhi, U.P. and Jharkhand respectively.

Table 3.15 \	Ventilation	in the	AWC
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Ventilation in the AWC					
	State		Frequency	Percent	
		can't say	1	2.0	
Dalhi		adequate	42	84.0	
Demi	Ventilation	inadequate	7	14.0	
		Total	50	100.0	
	in the AWC	can't say	1	2.0	
IID		adequate	36	72.0	
UP		inadequate	13	26.0	
		Total	50	100.0	

Jharkhand	adequate	37	72.5
	inadequat	e 13	25.5
	does not exist	1	1.9
	Total	51	100.0

Adequate ventilation is present at the majority of AWCs with 84%, 72% and 72.5% at Delhi, U.P. and Jharkhand respectively. In the rest 14, 26 and 25.5 percent of cases in Delhi, U.P. and Jharkhand ventilation is inadequate.

Lighting in the AWC				
	State		Frequency	Percent
		can't say	2	4.0
		good	34	68.0
Delhi		fair	13	26.0
		poor	1	2.0
		Total	50	100.0
		can't say	1	2.0
	Lighting in the AWC	good	16	32.0
UP		fair	23	46.0
		poor	10	20.0
		Total	50	100.0
		good	23	45.1
Iborkhond		fair	13	25.5
Jnarknand		poor	15	29.4
		Total	51	100.0

Table 3.16 Lighting in the AWC

Next, it is found that lighting at AWC is mostly either good (68%) or fair (26%) in Delhi while in the U.P. while this percentage is a little low with 32% and 46% being good and fair respectively. The state of Jharkhand present that 45% and 25.5% of AWCs have good and fair lighting and as many as 29.4% of AWCs have poor lighting facility.

Table 3.17 Personal grooming of AWW

	Personal grooming of AWW					
State Frequency Percen						
		can't say	3	6.0		
	Personal grooming of AWW	good	44	88.0		
Delhi		average	2	4.0		
		poor	1	2.0		
		Total	50	100.0		

	can't say	4	8.0
UP	good	38	76.0
	average	8	16.0
	Total	50	100.0
	good	43	84.3
Jharkhand	average	7	13.7
	poor	1	2.0
	Total	51	100.0

The data above presents that a majority of AWWs are in good category of personal grooming in Delhi (88%), U.P (76%) and Jharkhand 84.3% and only a minority of them are in average category in Delhi (4%), U.P (16%) and Jharkhand (13.7%). This also shows the seriousness of AWWs towards their work when going to the centre.

AWW checks personal grooming of the children				
	State		Frequency	Percent
		can't say	1	2.0
		regularly at		
Delhi		the time of	20	78.0
		coming or	39	/ 8.0
		going		
		sometimes or		
		whenever it	10 50 1	20.0
		is required		
		Total	50	100.0
		can't say	1	2.0
	AWW	regularly at		
		the time of	24	48.0
	norsonal	coming or		
UP	grooming of	going		
	the children	sometimes or		
		whenever it	25	50.0
		is required		
		Total	50	100.0
		can't say	1	2.0
		regularly at		
		the time of	24	47.1
Jharkhand		coming or	24	Τ/.Ι
		going		
		sometimes or		
		whenever it	26	51.0
		is required		

Table 3.18 AWW checks personal grooming of the children

Total51100.0Checking of personal grooming is at the priority of AWWs in a majority (78%) of time in Delhiprimarily due to its metropolitan existence whereas in U.P. (48%) and Jharkhand (47.1%) it washappening in lesser incidences. In as many as 20% of the cases in Delhi, 50% in U.P. and 51% inJharkhand checking for personal grooming is happening only sometimes.

AWW p	AWW promotes good hygiene practices among children					
	State		Frequency	Percent		
		can't say	1	2.0		
		actively promoted	39	78.0		
Delhi		promoted occasionally	9	18.0		
		not promoted	1	2.0		
	AWW	Total	50	100.0		
	promotes	can't say	1	2.0		
	good hygiene practices among	actively promoted	34	68.0		
UP		promoted occasionally	14	28.0		
	children	not promoted	1	2.0		
		Total	50	100.0		
		actively promoted	37	72.5		
Jharkhand		promoted occasionally	14	27.5		
		Total	51	100.0		

Table 3.19 AWW promotes good hygiene practices among children

The personal grooming of children attending AWC also depends upon how often AWW is promoting good hygiene practices among them. Personal hygiene includes activities like bathing, washing hands, and brushing teeth. Encourage the child to perform these tasks regularly to keep germs at bay and ensure cleanliness. This aspect is further explored to find out the frequency of promotion of hygiene practices by AWW and the data present that these are actively promoted most of the time in Delhi (78%), Jharkhand (72.5%) and U.P. (68%). However personal hygiene practices are only occasionally promoted in as many as 18% cases in Delhi, 28% in U.P. and 27.5% in Jharkhand. This clearly shows that high priority to personal hygiene is given in Delhi state followed by Jharkhand and U.P.

hand washing with soap among children before and after meal				
State			Frequency	Percent
		can't say	1	2.0
		yes	42	84.0
Delhi		not always	6	12.0
		no	1	2.0
	hand	Total	50	100.0
	washing with soap among children before and	can't say	1	2.0
		yes	35	70.0
UP		not always	11	22.0
		no	3	6.0
	after meal	Total	50	100.0
		yes	31	60.8
The sulph and		not always	18	35.3
Jharkhand		No	2	3.9
		Total	51	100.0

Table 3.20 Hand washing with soap among children before and after meal

Hand washing with soap before and after a meal is mandatorily present in children in 84% cases in Delhi, 70% in U.P. and 60.8% in Jharkhand. Remaining AWWs report that though children wash hands before and after meal but not at always and a small minority i.e. 2% in Delhi, 6% in U.P. and 4% in Jharkhand don't wash hands at all before and after the meal.

To improve hand washing practice a designated place i.e. presence of a hand washing facility is imperative. The table above shows proper hand washing facility which means availability of water with basin is present in 56% of cases in Delhi, 54% in U.P. and 49% in Jharkhand. It is clear from the data that many times (40% in Delhi, 28% in U.P. and 33.3% in Jharkhand) improper hand washing facilities are available at the AWC which means either water supply is abrupt, or basin isn't there so the child can hardly use it. Also, in 18% of cases in U.P., 17.6% cases in Jharkhand and 4% cases in Delhi there is absolutely no hand washing facility present at the AWC.

The data in the table above clearly points out that no heed is paid in this regard. It is reported that the height of washing facility/ wash basin is as per the height of children in only 32% cases

in Delhi, 30% in U.P, 17.6% in Jharkhand. Next a huge majority i.e. 68% in Delhi, 66% in U.P. and 80.4% in Jharkhand reveals that the height of washbasins for washing hands is not proper.

Status of clean and tidy clothes among children				
	State		Frequency	Percent
		can't say	1	2.0
Delhi		yes	37	74.0
Denn		not always	12	24.0
		Total	50	100.0
	Status of clean and tidy clothes among children	can't say	1	2.0
		yes	22	44.0
UP		not always	24	48.0
		no	3	6.0
		Total	50	100.0
	ennaren	can't say	1	2.0
		yes	9	17.6
Jharkhand		not always	38	74.5
		no	3	5.9
		Total	51	100.0

Table 3.21 Status of clean and tidy clothes among children

Neat and tidy clothes give the children a good feel. Clothes not only cover the body but also improve their personality. Dirty clothes carry many germs and bacteria which can cause infection and further the child may end up falling ill. The data above signify that children wear neat and tidy clothes in 74% of cases in Delhi, 44% in U.P. and 17.6% in Jharkhand. Such stark difference can be attributed to improved income of respondents in Delhi and relatively poor population of Jharkhand. A sizeable number of children in Delhi i.e. 24%, half of the children i.e. 48% in U.P. and most children i.e. 74.5% in Jharkhand are not wearing neat and tidy clothes on a regular basis.

	Trimmed hairs and nails of children					
		State		Frequency	Percent	
	Dalhi	Trimmed	can't say	1	2.0	
Delni	hairs and	yes	41	82.0		

Table 3.22 Trimmed hairs and nails of children

	nails of	not always	8	16.0
	children	Total	50	100.0
		can't say	1	2.0
		Yes	23	46.0
UP		not always	24	48.0
		No	2	4.0
		Total	50	100.0
		Yes	10	19.6
Thoulthoud		not always	34	66.7
JIIAIKIIAIIO		No	7	13.7
		Total	51	100.0

Regular hair cutting and nail trimming are essential personal grooming habits for children. These practices help keep away scalp problems and nail-borne infections, promoting overall health in the children. The AWWs are investigated on the same and 82% in Delhi revealed that children come to the centre with trimmed hairs and neat nails. Surprisingly, this percentage in the U.P. and Jharkhand is 46% and 19.6% respectively. Next 66.7% in Jharkhand, 48% in U.P. and only 16% in Delhi report that children do not come with trimmed hairs and neat nails all the time. Such a trend can be attributed to a greater number of working mothers in unorganized labor sector in Jharkhand.

Brushing of teeth daily is known to children					
	State		Frequency	Percent	
		can't say	1	2.0	
		Yes	43	86.0	
Delhi		not all the children are familiar	6	12.0	
		Total	50	100.0	
	Drughing of	can't say	1	2.0	
	teeth daily is known to children	Yes	30	60.0	
UP		not all the children are familiar	16	32.0	
		No	3	6.0	
		Total	50	100.0	
		Yes	23	45.1	
Jharkhand		not all the children are familiar	16	31.4	

Table 3.23 Brushing of teeth daily is known to children

no	12	23.5
Total	51	100.0

It is important to brush the teeth to prevent gum disease. Refusal to brush one's teeth for several days can lead to the onset of gum disease. Brushing ensures the removal of plaque, which is the primary cause for tooth decay and gum disease. It also arrests the build-up of any plaque formation. The awareness among children attending AWCs about brushing of teeth daily is found to be appreciably high in 86% of cases in Delhi, medium i.e. 60% in the U.P. and low i.e. 45% in Jharkhand. Many times, the AWWs report that not all the children are familiar with brushing their teeth daily. Such a trend is seen more in the U.P. (32%), Jharkhand (31.4%) than Delhi (12%). A small minority of children, i.e. 6% in U.P. and quarter i.e. 23.5% in Jharkhand report that children are totally ignorant about brushing the teeth daily.

Promotion of oral hygiene practices by AWW				
	State		Frequency	Percent
		can't say	1	2.0
		actively	<i>Δ</i> 1	82.0
Delhi		promoted	71	02.0
Demi		promoted	8	16.0
		occasionally	0	10.0
		Total	50	100.0
		can't say	2	4.0
	Do AWW promote oral hygiene practices	actively	36	72.0
		promoted		
UP		promoted	8	16.0
		occasionally	0	10.0
		not promoted	4	8.0
		Total	50	100.0
		actively	33	64.7
Jharkhand		promoted		04.7
		promoted	17	33.3
		occasionally	1 /	55.5
		not promoted	1	2.0
		Total	51	100.0

Table 3.24 Promotion of oral hygiene practices by AWW

As discussed above, children's oral health is vital. Failure to take care of the child's teeth can not only cause oral health problems but issues in other parts of the body as bacteria enter the bloodstream. Practicing good oral habits is critical in limiting the occurrence of infection and tooth decay for children. For instilling the habit of brushing the teeth daily, it is important that it should be actively promoted by the AWW. This aspect, when probed further revealed that in Delhi 82% of AWWs report that they actively promote oral hygiene in their centres. Next, 72% in the U.P. and 64.7% in Jharkhand report that they actively promote brushing of teeth among the children. Sixteen percent of AWWs in Delhi, 16% in U.P. and 33% in Jharkhand say that they only occasionally promote oral hygiene at their centres. A small minority of AWWs, i.e. 8% in U.P. and 2% in Jharkhand admit that oral hygiene practices are not promoted at their centres.

Children taking bath daily				
	State		Frequency	Percent
		can't say	2	4.0
Delhi		yes	34	68.0
Denn		not always	14	28.0
		Total	50	100.0
	Children taking bath daily	can't say	1	2.0
		yes	35	70.0
UP		not always	12	24.0
		no	2	4.0
		Total	50	100.0
		yes	12	23.5
Jharkhand		not always	32	62.7
		no	7	13.7
		Total	51	100.0

Table 3.25 Children taking bath daily

As many as 68% of AWWs in Delhi, 70% in U.P. and 23.5% in Jharkhand report that children at their centres are taking a bath daily. A significant percentage of AWWs i.e. 28% in Delhi, 24% each in U.P. and Jharkhand also report that children do not take bath regularly while very few AWW in U.P. (4%) and Jharkhand (13.7%) only report that children do not take bath before coming to AWCs.

Table 3.26 Availability of weighing machine

Availability of weighing machine

	State		Frequency	Percent
		yes	46	92.0
Delhi		no	4	80
		Total	50	100.0
	Availability of	yes	47	94.0
UP	weighing	no	3	6.0
	machine	Total	50	100.0
		yes	49	96.1
Jharkhand		no	2	3.9
		Total	51	100.0

Weighing machines are available at 92% centres in Delhi, 94% in U.P. and 96% in Jharkhand. Electronic scale is present in 50% of AWCs in Delhi, 80% in U.P. and 70 % in Jharkhand. Next bathroom scale of weighing machine is found in 46% cases in Delhi12% in the U.P. and 11.8% in Jharkhand. The salter scale type of weighing machine is only found in the U.P. (6%) and Jharkhand (17.6%).

Weight measuring frequency of children				
	State		Frequency	Percent
		Monthly	46	92.0
Delhi		Quarterly	4	8.0
		Total	50	100.0
	XX 7 • 1 /	Monthly	46	92.0
	measuring frequency of	Quarterly	3	6.0
UP		half yearly	1	2.0
		Total	50	100.0
		Monthly	47	92.2
Jharkhand		Quarterly	2	3.9
		half yearly	2	3.9
		Total	51	100.0

Table 3.27 Weight measuring frequency of children

92% each in Delhi, U.P. and Jharkhand the weight monitoring of children is done monthly. Only a minority of them i.e. 8% in Delhi, 6% in the U.P. and almost 4% in Jharkhand report that weight monitoring of children attending AWCs is done quarterly however a fraction i.e. 2% and 3.9% in U.P. and Jharkhand report that weight monitoring is done on a half yearly basis.

Table 3.28 Weight, height, and nutritional status updating frequency on Poshan Tracker

Weight, height, and nutritional status updating frequency on Poshan Tracker

	State		Frequency	Percent
Delhi	Weight.	yes	50	100.0
	height, and	Total	50	100.0
UP	nutritional	yes	46	92.0
	status	no	4	8.0
	updating	Total	50	100.0
	frequency on	yes	48	94.1
Jharkhand	Poshan	no	3	5.9
	Iracker	Total	51	100.0

The data reveal that weight, height, and nutritional status are updated regularly on Poshan Tracker App in 100% cases in Delhi, 92% cases in U.P. and 94% cases in Jharkhand. Only in small minority of cases i.e. 8% in U.P and 6% in Jharkhand Poshan Tracker App isn't updated regularly owing to the erratic internet supply and lack of tech savviness.

MCP cards updating frequency				
	State		Frequency	Percent
		can't say	1	2.0
Delhi		yes	49	98.0
		Total	50	100.0
	MCP cards updating frequency	can't say	2	4.0
LID		yes	38	76.0
UP		no	10	20.0
		Total	50	100.0
Jharkhand		can't say	1	2.0
		yes	46	90.2
		no	4	7.8
		Total	51	100.0

 Table 3.29 MCP Cards Updating Frequency

In Delhi i.e. 98% and 90.2% in Jharkhand AWW report that they update the MCP card regularly whereas such a trend is reported by 76% of AWWs in U.P. a minority of AWWs in the U.P. and Jharkhand confess that they don't update the MCP cards regularly. Almost 20% of AWWs in the U.P. and 7.8% of AWWs in Jharkhand report that they do not update the MCP cards owing to the mammoth job-related tasks.

Table 3.30 Availability of the new ICDS growth chart and its usage by AWW

Availability of the new ICDS growth cl AWW	nart and its us	age by
State	Frequency	Percent

		available	38	76.0
		available		
Delhi		but not in	12	24.0
		use		
		Total	50	100.0
		can't say	4	8.0
		available	33	66.0
	Availability	available		
IID	of the new	but not in	10	20.0
UP	ICDS growth	use		
	chart and its	not	3	6.0
	usage by AWW	available	5	0.0
		Total	50	100.0
		available	41	80.4
		available		
		but not in	2	3.9
Jharkhand		use		
		not	8	157
		available	0	13.7

AWWs report that the new ICDS growth chart is available and to them as well as in use in 80.4% cases in Jharkhand, 76% in Delhi and 66% in the U.P. However, many AWWs (24% in Delhi, 20% in U.P. and 3.9% in Jharkhand) report that though they have the new ICDS growth chart, they are still not using it owing to lack of understanding towards it. The new ICDS growth chart is not available to 6% AWWs in U.P. and 15.7% in Jharkhand whereas 8% of AWWs in U.P. could not say anything on this issue.

	Methods used for diagnosing malnutrition				
	State		Frequency	Percent	
		can't say	2	4.0	
		growth chart	13	26.0	
Delhi	Delhi	weight, height and age	35	70.0	
Methods	Methods used for	Total	50	100.0	
	diagnosing	can't say	1	2.0	
	malnutrition	growth chart	28	56.0	
UP	mid upper arm circumference	1	2.0		
		weight, height and age	17	34.0	

Table 3.31 Methods used for diagnosing malnutrition

		Poshan tracker calculator	3	6.0
		Total	50	100.0
		growth chart	19	37.3
Jharkhand	mid upper arm circumference	13	25.5	
	weight, height and age	19	37.3	
		Total	51	100.0

The table 3.31 above represents the information given by AWWs about the preferred method that they use to diagnose malnutrition among children attending AWCs. In Delhi 70% use weight, height, and age, 26% AWW use growth chart. In UP, 56% and 34% use weight, height, and age, 26% AWW use growth chart respectively. In Jharkhand 25.5% AWW also use MUAC apart from weight, height and age and growth chart.

States	Responses	Frequency	Percentage
Delhi	Cannot say	5	10
	Stunting (low height-for-age)	12	24
	Wasting (low weight for height)	32	64
	Other	1	2.0
	Total	50	100.0
UP	cannot say	3	6.0
	Stunting (low height-for-age)	24	48.0
	Wasting (low weight for height)	18	36.0
	Others	5	10.0
	Total	50	100.0
Jharkhand	Stunting (low height-for-age)	37	72.5
	Wasting (low weight for height)	14	27.5
	Total	51	100.0

 Table 3.32 Identification of the children with malnutrition using the growth chart and

 Poshan Tracker

The table 3.32 presents data on how the AWW identify the Children with malnutrition using the methods like growth chart, Weight, height and age, Mid arm circumference, Poshan Tracker Calculator in three different states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 24 percent of respondents mention stunting, 64 percent wasting, while 10 percent have no say to this, and 2 percent provided diverse responses. In UP, 24 percent of respondents used stunting, 18 percent wasting, 6 percent indicating no response, and 10 percent used provided other

responses. In Jharkhand, 72.5 percent used stunting to identify malnutrition, 27.5 wasting to identify children with malnutrition.

Overall, Stunting and Wasting are prominent in identifying children with malnutrition, but a notable percentage remains of the AWW in Delhi and Uttar Pradesh who either cannot provide answer or believe in some other way of identifying children with malnutrition. This clearly suggests some measures to be taken to overcome this gap in the knowledge and understanding of Aww.

States	Responses	Frequency	Percentage
Delhi	cannot say	2	4.0
	Yes, and in use	7	14.0
	Yes, but locked/not in use	2	4.0
	No	39	78.0
	Total	50	100.0
UP	Yes, and in use	6	12.0
	Yes, but locked/not in use	9	18.0
	No	35	70.0
	Total	50	100.0
	Yes, and in use	6	12.0
Jharkhand	Yes, and in use	24	47.1
	Yes, but locked/not in use	11	21.6
	No	16	31.4
	Total	51	100.0

Table 3.33 Separate kitchen facility available in the AWC

The table provides an overview of separate kitchen facilities in Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 78% lack separate kitchens, 4% are uncertain, 14% use them, and 4% have unused ones. In UP, 70% lack separate kitchens, 12% use them, and 18% have unused ones. In Jharkhand, 47.1% use separate kitchens, 21.6% have unused ones, and 31.4% lack them, indicating regional disparities in kitchen facilities.

States	Responses	Frequency	Percentage
Delhi	Cannot say	2	4.0
	Yes, and sufficient	11	22.0
	Limited/not sufficient	6	12.0
	Not available	31	62.0
	Total	50	100.0

 Table 3.34 Separate storage facility available in the AWC

UP	cannot say	2	4.0
	Yes, and sufficient	13	26.0
	Limited/not sufficient	2	4.0
	Not available	33	66.0
	Total	50	100.0
Jharkhand	Yes, and sufficient	22	43.1
	Limited/not sufficient	14	27.5
	Not available	15	29.4
	Total	51	100.0

The table 3.34 presents insights into separate storage facility availability in Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 62% of respondents stated no separate storage facilities, while 22% found them sufficient and 12% insufficient. In UP, 66.0% reported a lack of such facilities, 26.0% found them sufficient, and 4.0% insufficient. Conversely, in Jharkhand, 43.1% reported adequate storage, 27.5% as insufficient, and 29.4% as unavailable. Minor percentages (ranging from 4.0% to 4.0%) in all states were uncertain.

States	Responses	Frequency	Percentage
Delhi	Cannot say	3	6.0
	Counseling Parents & child	6	12.0
	Sent to the Hospital and Private Clinical	24	48.0
	Given balanced diet and extra meal	15	30.0
	Any other	2	4.0
	Total	50	100.0
UP	Cannot say	3	6.0
	Counseling Parents & child	20	40.0
	Sent to the Hospital and Private Clinical	7	14.0
	Given balanced diet and extra meal	13	26.0
	Home Remedies apply	5	10.0
	Any other	2	4.0
	Total	50	100.0
Jharkhand	Counseling Parents & child	16	31.4
	Sent to the Hospital and Private Clinical	7	13.7
	Given balanced diet and extra meal	8	15.7
	Any other	20	39.2
	Total	51	100.0

Table 3.35 Steps by AWW for Newly Diagnosed Malnourished Children

The table above represents the data related to the steps taken by AW if a child is found to be malnourished in the states of Delhi, UP and Jharkhand. In Delhi, 48 percent of the AW sent children to the Hospital and Private Clinic, 30 percent focused on balanced diet and extra meals to be given to Children and 12 percent AWW stress on counseling the parents and child.

In the state of UP, 14 percent of the AW sent children to the hospital and private Clinic if found malnourished, 26 percent focus on balanced diet and extra meal to be given to Children, 40 percent AW provide counseling to the parents and child and 10 percent recommend home remedies.

On the other hand, in the state of Jharkhand, 13.7 percent of the AWW sent children to the hospital and private Clinic if found malnourished, 15.7 percent focus on balanced diet and extra meal to be given to Children, 31.7 percent AWW provide counseling to the parents and child and 39.2 percent AWW take varied steps other than mentioned above.

States	Responses	Frequency	Percentage
Delhi	cannot say	1	2.0
	Counseling parents and child	13	26.0
	Send to the hospital	24	48.0
	Home remedies apply	10	20.0
	Any other	2	4.0
	Total	50	100.0
UP	Counseling parents and child	1	2.0
	Send to the hospital	3	6.0
	Send to the private clinic	1	2.0
	Home remedies apply	45	90.0
	Total	50	100.0
Jharkhand	cannot say	1	2.0
	Counseling parents and child	1	2.0
	Send to the TMC	5	9.8
	Send to the hospital	3	5.9
	Send to the private clinic	2	3.9
	Home remedies apply	38	74.5
	any other	1	2.0
	Total	51	100.0

Table 3.36 Steps Taken for Diarrhea Management

The table 3.36 above represents the data related to the steps taken by AWW if a child is found to be suffering from diarrhea in the states of Delhi, UP and Jharkhand. In Delhi, 48 percent of the

AW sent children to the hospital, 26 percent AW stress on counseling the parents and child and 20 percent recommend home remedies.

In the state of UP, 90 percent of the AWW recommend home remedies for children suffering from diarrhea and very less 6 percent AWW sent children to the hospital. On the other hand, in the state of Jharkhand, 5.9 percent of the AWW sent children to the hospital, 9.8 percent of the AWW sent children to the TMC, and 74.5 percent recommend home remedies.

Overall result depicts that there is a need to strengthen the knowledge and understanding of AWWs in all the three states to combat diarrhea in terms of the important measures to be taken if a child is found to be suffering from diarrhea.

The table above shows the percentage of AWW who provide ORS to children suffering from diarrhea in the states of Delhi, UP and Jharkhand. In Delhi State, the percentage of Aw providing ORS to Children suffering from diarrhea is 54% against 42% who are not providing ORS.

In UP state the condition is good with 94 percent AWW providing ORS to children suffering from diarrhea and only 6 percent AWW do not provide ORS. In Jharkhand state also similar results are obtained as those of UP with 96.1 percent AWW providing ORS to children suffering from diarrhea and with only 3.9 percent AWW do not provide ORS to children suffering from diarrhea.

States	Responses	Frequency	Percentage
Delhi	Cannot say	3	6.0
	Yes	30	60.0
	No	17	34.0
	Total	50	100.0
UP	Cannot say	1	2.0
	Yes	40	80.0
	No	9	18.0
	Total	50	100.0
Jharkhand	Yes	46	90.2
	No	5	9.8
	Total	51	100.0

 Table 3.37 Distribution of Iron/ Folic Acid supplements

The table 3.37 provides insights into the provision of iron-folic acid supplements to children in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 60.0% of respondents affirmed that iron-folic acid supplements are regularly provided to children, while 34.0% indicated otherwise. A small percentage (6.0%) could not provide a definitive response regarding this provision. Moving to Uttar Pradesh (UP), a substantial 80.0% of respondents reported that these supplements are provided regularly to children, contrasting with the 18.0% who stated otherwise. Only 2.0% of respondents were uncertain about this provision. In Jharkhand, 90.2% of respondents confirmed the regular provision of iron-folic acid supplements to children. Only 9.8% indicated that these supplements were not provided.
States	Responses	Frequency	Percentage
Delhi	cannot say	3	6.0
	Yes	20	40.0
	No	27	54.0
	Total	50	100.0
UP	cannot say	1	2.0
	Yes	42	84.0
	No	7	14.0
	Total	50	100.0
Jharkhand	Yes	47	92.2
	No	4	7.8
	Total	51	100.0

Table 3.38 Provision of Vitamin A Supplements on Regular Basis

The table 3.38 offers valuable insights into the provision of Vitamin A supplements on a regular basis in three diverse Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 40.0% of respondents confirmed that Vitamin A supplements are regularly provided, while 54.0% stated otherwise. A small fraction (6.0%) was uncertain about this provision. Moving to Uttar Pradesh (UP), a substantial 84.0% of respondents reported that Vitamin A supplements are provided regularly, contrasting with the 14.0% who indicated otherwise. A mere 2.0% of respondents were unsure about this provision. Jharkhand stood out with an overwhelmingly positive picture, as 92.2% of respondents affirmed the regular provision of Vitamin A supplements. Only 7.8% of respondents reported that these supplements were not provided.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Yes	40	80.0
	No	6	12.0
	Total	50	100.0
UP	cannot say	1	2.0
	Yes	31	62.0
	No	18	36.0
	Total	50	100.0
Jharkhand	cannot say	1	2.0
	Yes	44	86.3
	No	6	11.8
	Total	51	100.0

 Table 3.39 Deworming of Children at AWC

The table provides valuable insights into the practice of deforming children on a regular basis in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a substantial 80.0% of respondents indicated that deforming of children is carried out regularly, while 12.0% reported otherwise. A small fraction (8.0%) was unsure about this practice. Turning to Uttar Pradesh (UP), 62.0% of respondents affirmed the regular practice of deforming children, while 36.0% stated otherwise. Only 2.0% of respondents were uncertain about this practice. Jharkhand exhibited an overwhelmingly positive trend, with 86.3% of respondents confirming the regular practice of deforming children, and only 11.8% indicating otherwise. Like UP, 2.0% of respondents were unsure about this practice.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Actively Promoted	40	80.0
	Partially Promoted	6	12.0
	Total	50	100.0
UP	cannot say	2	4.0
	Actively Promoted	44	88.0
	Partially Promoted	4	8.0
	Total	50	100.0
Jharkhand	Actively Promoted	47	92.2
	Partially Promoted	4	7.8
	Total	51	100.0

Table 3.40 Promotion of Exclusive Breastfeeding Up till 6 Months

The table provides valuable insights into the promotion of exclusive breastfeeding up until the age of 6 months in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 80.0% of respondents reported that exclusive breastfeeding up to 6 months of age is actively promoted, with 12.0% indicating partial promotion and 8.0% unsure about the level of promotion. Turning to Uttar Pradesh (UP), an overwhelming 88.0% of respondents affirmed that exclusive breastfeeding is actively promoted, while 8.0% reported partial promotion and 4.0% were uncertain about this practice. Jharkhand with 92.2% of respondents indicating active promotion and only 7.8% suggesting partial promotion.

States	Responses	Frequency	Percentage
Delhi	cannot say	3	6.0
	Yes, regularly	46	92.0
	No	1	2.0
	Total	50	100.0
UP	cannot say	4	8.0
	Yes, regularly	45	90.0
	No	1	2.0
	Total	50	100.0
Jharkhand	Yes, regularly	44	86.3
	No	7	13.7
	Total	51	100.0

Table 3.40 Frequency of Complementary Feeding Sessions

The table provides valuable insights into the implementation of complementary feeding sessions by Anganwadi Workers (AWWs) in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, an overwhelming 92.0% of respondents reported that complementary feeding sessions are conducted regularly by AWWs. Only a minor percentage (2.0%) stated that such sessions are not carried out, with 6.0% unable to provide a definitive response. In UP, a significant majority (90.0%) of respondents affirmed the regular implementation of complementary feeding sessions by AWWs. A mere 2.0% reported the absence of these sessions, and 8.0% were uncertain about this practice. In Jharkhand, 86.3% of respondents confirmed the regular conduct of complementary feeding sessions. While 13.7% stated that these sessions are not undertaken, the majority's positive response reflects the importance placed on child nutrition.

II Noteworthy practices at AWC from the Supervisor's perspective

State	ITEM		Response	Frequency	Percentage
Delhi	frequency	of	Cannot say	1	20
	visit	of	anything		
	AWCs		Monthly basis	3	60
			As and when	1	20
			required		
			Total	5	100.0
Uttar	frequency	of	Cannot say		
Pradesh	visit	of	anything		
	AWCs		Monthly basis	7	87.5

Table 3.41Frequency of visit of AWCs

			As and when	1	12.5
			required		
			Total	8	100.0
Jharkhand	frequency	of	Cannot say		
	visit	of	anything		
	AWCs		Monthly basis	7	87.5
			As and when	1	12.5
			required		
			Total	8	100.0

The table 3.41 shows the percentage of supervisors visiting AWCs. The collected data shows that in Delhi 60% supervisors often monthly visit AWCs, 20% visit as when required and 20% supervisors did not respond. In UP 87.5% supervisor visit monthly and 12.5% visit as when required while in Jharkhand 87.5% supervisor visit AWCs monthly and 12.5% supervisor visit AWCs as when required.

State	item	Response	Frequency	Percentage
Delhi		No practice in	2	40
	Noteworthy	the center		
	Nutrition Practices	Practices	3	60
	at the AWC	about diet and		
		nutrition		
		knowledge,		
		Total	5	100
Uttar	Noteworthy	No practice in	2	40
Pradesh	Nutrition Practices	the center		
	at the AWC	Practices	3	60
		about diet and		
		nutrition		
		knowledge,		
		Total	5	100
Jharkhand	Noteworthy	No practice in	2	40
	Nutrition Practices	the center		
	at the AWC	Practices	3	60
		about diet and		
		nutrition		
		knowledge.		

Table 3.42Noteworthy Nutrition Practices at the AWC

	Total	5	100

Above table 3.42 shows that the column percentage having 60% following practices about diet and nutrition knowledge and 40% of AWCs shows no nutrition practices in AWCs respectively. In UP there are 25% AWCs which are having no nutrition practice in the center, 75% AWCs not having nutrition practices. And in Jharkhand there is 75% practices are about diet and nutrition knowledge and 25% having family pressure to have 3 times meals in AWCs.

State	Item	Response	Frequency	Percentage
Delhi	Status of data updating on	No	1	20
	poshan tracker	response		
		Yes	4	80
		Total	5	100
Uttar	Status of data updating on	No		
Pradesh	poshan tracker	response		
		Yes	8	100
		Total	8	100
Jharkhand	Status of data updating on	No	1	12.5
	poshan tracker	response		
		Yes	7	87.5
		Total	8	100

Table3.43Status of data updating on Poshan tracker

Above table 3.43 shows that in Delhi 80% shows AWWs regularly updating the data on Poshan tracker calculator and only 20% AWWs were not updating the data on Poshan tracker calculator. In UP 100% shows that AWWs regularly update the data on Poshan tracker calculator. In Jharkhand 87.5% shows AWWs regularly updating the data on Poshan tracker calculator, and 12.5% AWWs were not updating the data on Poshan tracker calculator respectively.

The above table shows that in Delhi 100% maintaining the data on Poshan tracker calculator was helpful in assessing nutrition status of children. In UP it also shows 100% helpful in maintaining the data on Poshan tracker Calculator for assessing nutrition status of children. And in Jharkhand 87.5% shows that maintaining the data on Poshan tracker calculator was helpful for assessing

nutrition status of children and 12.5% were not having any response about the maintaining the data on Poshan tracker calculator for assessing the nutrition status of children simultaneously.

State	ITEM	Response	Frequency	Percentage
Delhi	Status of Hot Cooked	Home	5	100
	Meals and THR at	cooked meal		
	AWC	THR		
		Total	5	100
Uttar	Status of Hot Cooked	Home	6	75
Pradesh	Meals and THR at	cooked meal		
	AWC	THR	2	25
		Total	8	100
Jharkhand	Status of Hot Cooked	Home	6	75
	Meals and THR at	cooked meal		
	AWC	THR	2	25
		Total	8	100

Table 3.44 Status of Hot Cooked Meals and THR at AWC

The above table 3.44 shows that in Delhi 100% AWWs are providing Hot Cooked Meal. And In UP 25% AWWs are providing Hot Cooked meals and 75% are having the THR facility. And in Jharkhand 75% of AWWs are providing hot cooked meal and 25% THR respectively.

The table 3.44 shows that in Delhi 100% AWC provides both meal hot cooked and morning snacks together in the morning. In UP 100% AWC provides both meal hot cooked and morning snacks together in the morning. And In Jharkhand 37% AWC provide morning snacks in morning and hot cooked meal at mid-day and 62.5% AWC provides both meal hot cooked and morning snacks together around mid-day.

Table 3.45Status	of meal	and sn	acks, pro	vided by	AWCs
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State	Item	Response	Frequency	Percentage
Delhi	Status of	Hot cooked meal	1	20
	meal and	Morning Snacks	1	20
	snacks,	Both	3	60
	provided by AWCs	Total	5	100
Uttar	Status of	Not providing	8	100
Pradesh	meal and snacks,	any food in AWCs		

	provided by AWCs	Total	8	100
Jharkhand	Status of meal and snacks, provided by AWCs	Hot cooked meal Both Not providing any food in AWCs	1 2 5	12.5 25.0 62.5
		Total	8	100

Table 3.46 Frequency of Providing Morning Snacks and Hot Cooked Meal at the AWC

State	Item	Response	Frequency	Percentage
Delhi	Provision of	Hot cooked meal	1	20
	Morning snacks	Morning Snacks	1	20
	and Hot cooked	Both	3	60
	meal at AWC	Total	5	100
Uttar	Provision of	Not providing	8	100
Pradesh	Morning snacks	any food in		
	and Hot cooked	AWCs		
	meal at AWC	Total	8	100
Jharkhand	Provision of	Hot cooked meal	1	12.5
	Morning snacks	Both	2	25.0
	and Hot cooked	Not providing	5	62.5
	meal at AWC	any food in		
		AWCs		
		Total	8	100

The above table 3.46 shows AWC in Delhi providing 20% hot cooked meal only, other providing 20% morning snacks and in 60% of AWC providing both Hot cooked meals and morning snacks. In UP 100% AWC were not providing both Hot cooked meals and morning snacks. In Jharkhand 25% AWC proving both Hot cooked meals and morning snacks and in 62.5% were not providing any meal.

State	item			Response	Frequency	Percentage
Delhi	varieties	available	in	Daliya	2	40
	morning	snacks		Chana	2	40
				Egg	1	20
				Total	5	100
Uttar	varieties	available	in	Daliha&	8	100
Pradesh	morning	snacks		Chana		
				Total	8	100
Jharkhand	varieties	available	in	Daliha&	8	100
	morning	snacks		Chana		
				Total	8	100

Table 3.47 Variations Available in Morning Snacks

The table 3.47 above presents a percentage breakdown of the varieties of snacks available at Anganwadi Centers (AWC) in three different states: Delhi, Uttar Pradesh, and Jharkhand, allowing us to make a comparative analysis. In Delhi, the data reveals that the morning snacks offered at AWCconsistof40% daliya (a type of porridge), 40% chana (chickpeas), and 20% egg. This suggests a relatively diverse menu with an inclusion of eggs, catering to varying nutritional preferences and requirements.

In contrast, Uttar Pradesh appears to have a simplified approach, as the morning snacks there comprise 100% *daliya* and 100% chana. This indicates a uniform and possibly cost-effective provision of snacks, emphasizing a staple diet of *daliya* and chana, which are nutritious and widely available ingredients.

Similarly, Jharkhand also opts for a straightforward strategy with 100% *daliya* and 100% chana in their morning snacks at AWC. This aligns with the idea of offering a consistent and uncomplicated menu that focuses on locally sourced and easily accessible foods, ensuring cost-efficiency and nutritional adequacy.

In summary, the data illustrates the diversity in snack offerings among AWCs in these three states. Delhi stands out with a more varied menu, including eggs, potentially catering to a more diverse demographic. In contrast, Uttar Pradesh and Jharkhand prioritize simplicity and cost-effectiveness by predominantly offering *daliya* and chana in their morning snacks,

emphasizing the availability of nutritious staples.

These variations likely reflect regional dietary preferences, resource availability, and nutritional considerations, demonstrating the adaptability of AWCs to meet the unique needs of their communities.

State	Item	Response	Frequency	Percentage
Delhi	food items	Daliya	2	40
	available in	Pulao	2	40
	Hot Cooked	Khichdi	1	20
	meal	Total	5	100
Uttar	food items	No food item	8	100
Pradesh	available in	provided		
	Hot Cooked	Total	8	100
	meal			
Jharkhand	food items	Daliya	4	50
	available in	Khichdi	4	50
	Hot Cooked	Total	8	100
	meal			

Table 3.48 Food Items Available in Hot Cooked Meals

Table 3.48 above provides a percentage breakdown of the food items available as hot cooked meals at Anganwadi Centers (AWC) in Delhi, Uttar Pradesh, and Jharkhand. In Delhi, the data indicates that 40% of the hot cooked meals served at AWC consist of *daliya*, another 40% comprises pulao, and the remaining 20% is khichdi. On the other hand, in Uttar Pradesh, no food items are provided as hot cooked meals at AWC. In contrast, Jharkhand offers a different menu for hot cooked meals at AWC, with 50% of the meals consisting of dal and the remaining 50% being khichdi.

III. Challenges at home

Table 3.49 Status of amount/kind of food children received during Pandemic

State	Item	Response	Frequency	Percentage
Delhi	Able to provide the	Yes	225	90
	similar amount/kind of	No	25	10

	food to your children	Total	250	100
	during Pandemic/			
	lockdown			
Uttar Pradesh	Able to provide the	Yes	154	61.6
	similar amount/kind of	No	96	38.4
	food to your children	Total	250	100.0
	during Pandemic/			
	lockdown			
Bihar	Able to provide the	Yes	156	62.4
	similar amount/kind of	No	94	37.6
	food to your children	Total	250	100.0
	during Pandemic/			
	lockdown			
Jharkhand	Able to provide the	Yes	130	52
	similar amount/kind of	No	120	48
	food to your children	Total	250	100
	during Pandemic/			
	lockdown			

In the table 3.49, last columnrepresents the percentage of responses regarding the ability to provide similar amount of food to the child during pandemic/lockdown. The respondents were from Delhi, UP, Bihar, and Jharkhand. Upon comparison of data across the states, it reveals that Delhi leads the category, where respondents claim that during lockdown/pandemic they were able to provide the similar amount of food to their child with a percentage of 90%. Bihar, UP and Jharkhand follow with a percentage of 62.4%, 61.6% and 52% respectively. However, in contrast, Jharkhand has the highest percentage where respondents claim that during lockdown/pandemic they were not in capacity to provide the similar amount of food to their child with a percentage of 48% and it was lowest in Delhi at 10%.

IV. Challenges at AWC

3.4a) Challenges at AWC from the AWW perspective

States	Responses	Frequency	Percentage
Delhi	cannot say	22	44.0
	Yes	16	32.0
	any other	12	24.0
	Total	50	100.0
UP	Yes	25	50.0
	No	25	50.0
	Total	50	100.0

Table 3.50 Knowledge about the norms for calories for malnourished child

Jharkhand	cannot say	4	7.8
	Yes	25	49.0
	No	22	43.1
	Total	51	100.0

The above table 3.50 depicts knowledge of AWW about the norms for calories for malnourished child in the states of Delhi, UP and Jharkhand. In Delhi, only 32 percent of the AWW have knowledge about the norms for calories for malnourished child. In UP, 50 percent of the Aw have knowledge and 50 percent of the AWW do not have knowledge about the norms for calories for malnourished child. In the state of Jharkhand, 49 percent of the Aw have knowledge and 43.1 percent of the AWW do not have knowledge about the norms for calories for malnourished child. Table 3.51 Knowledge About the Norms for Proteins for Malnourished Children

States (Knowledge about the norms for proteins formal nourished children)	Responses	Frequency	Percentage
Delhi	No	14	28.0
	Yes	36	72.0
	Total	50	100.0
UP	Yes	25	50.0
	No	25	50.0
	Total	50	100.0
Jharkhand	Yes	26	51.0
	No	25	49.0
	Total	51	100.0

The above table 3.51 depicts knowledge of AWW about the norms for proteins for malnourished child in the states of Delhi, UP and Jharkhand. In Delhi, only 30 percent of the AWW have knowledge about the norms for proteins for malnourished children. In UP, 50 percent of the Aw have knowledge and 50 percent of the AWW do not have knowledge about the norms for proteins for malnourished child. In the state of Jharkhand, 49 percent of the Aw have knowledge and 43.1 percent of the AWW do not have knowledge about the norms for proteins for malnourished child.

Table3.52 Knowledge About the Norms for Micronutrients for Malnourished Children

States	Responses	Frequency	Percentage
Delhi	No	22	44.0
	Yes	28	56.0
	Total	50	100.0
UP	No	26	52.0
	Yes	24	48.0
	Total	50	100.0
Jharkhand			
	Yes	24	47.1
	No	27	52.9
	Total	51	100.0

The above table 3.52 depicts knowledge of AW about the norms for micronutrients for malnourished children in the states of Delhi, UP and Jharkhand. In Delhi, only 30 percent of the Aw have knowledge about the norms for micronutrients for malnourished children. In UP, 48 percent of the Aw have knowledge and 50 percent of the Aw do not have knowledge about the norms for micronutrients for malnourished child. In the state of Jharkhand, 47.1 percent of the Aw have knowledge and 45.1 percent of the Aw do not have knowledge about the norms for micronutrients for malnourished child.

Table 3.53 Knowledge of AW about the indication of drugs in drug kit

States	Responses	Frequency	Percentage
Delhi	cannot say	27	54.0
	Yes	12	24.0
	No	11	22.0
	Total	50	100.0
UP	cannot say	3	6.0
	Yes	12	24.0
	No	35	70.0
	Total	50	100.0
Jharkhand	cannot say	5	9.8
	Yes	18	35.3
	No	28	54.9
	Total	51	100.0

The table 3.53 provides insights into the knowledge of respondents in three different Indian states—Delhi, Uttar Pradesh (UP), and Jharkhand—regarding the indications of drugs in a drug kit. In Delhi, a significant portion of respondents (54.0%) reported that they were uncertain or

unable to provide information about the indications of drugs in the drug kit. Only 24.0% claimed to possess knowledge in this regard, while 22.0% acknowledged not having such knowledge. Similarly, in Uttar Pradesh, a substantial 70.0% of respondents indicated a lack of knowledge concerning drug indications within the kit, contrasting with the 24.0% who asserted having this knowledge. A smaller percentage (6.0%) couldn't give a definitive response. Jharkhand exhibited a pattern closer to UP, with 54.9% of respondents lacking knowledge about drug indications. However, a relatively higher percentage (35.3%) claimed familiarity with this information, and 9.8% were uncertain about their knowledge.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Yes	12	24.0
	Partially	2	4.0
	No	32	64.0
	Total	50	100.0
UP	Yes	7	14.0
	Partially	5	10.0
	No	38	76.0
	Total	50	100.0
Jharkhand	Yes	27	52.9
	Partially	10	19.6
	No	14	27.5
	Total	51	100.0

Table 3.54 Satisfaction with the Kitchen Facility Available in the AWC

The table 3.54 provides an analysis of the satisfaction levels with kitchen facilities available in Anganwadi Centers (AWC) across three different states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a majority of respondents (64.0%) expressed dissatisfaction with the kitchen facilities, while only 24.0% were satisfied with them. A small percentage (4.0%) indicated partial satisfaction, and 8.0% were uncertain, selecting "Cannot say." In Uttar Pradesh, satisfaction levels were even lower, with only 14.0% of respondents expressing satisfaction, while 76.0% were dissatisfied. A small fraction (10.0%) reported partial satisfaction. In contrast, Jharkhand had the highest satisfaction rate among the three states, with 52.9% of respondents indicating satisfaction, 19.6% partial satisfaction, and 27.5% dissatisfaction.

Table 3.55 Satisfaction with the Storage Facility Available in the AWC

States	Responses	Frequency	Percentage
Delhi	cannot say	2	4.0
	Yes	14	28.0
	Partially	12	24.0
	No	22	44.0
	Total	50	100.0
UP	Yes	12	24.0
	Partially	2	4.0
	No	36	72.0
	Total	50	100.0
Jharkhand	Yes	15	29.4
	Partially	8	15.7
	No	28	54.9
	Total	51	100.0

This table 3.55 provides valuable insights into individuals' satisfaction levels regarding storage facilities in Anganwadi Centers (AWCs) in three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 44.0% of respondents expressed dissatisfaction with the storage facilities, while 28.0% reported satisfaction, and 24.0% expressed partial satisfaction, indicating mixed sentiments and room for improvement. In contrast, Uttar Pradesh (UP) presented a starkly different scenario, with a significant majority (72.0%) expressing dissatisfaction with AWC storage facilities. Only 24.0% reported satisfaction, and a mere 4.0% expressed partial satisfaction, underscoring the urgent need for improvements in UP's storage infrastructure. Jharkhand displayed a more balanced picture, with 54.9% expressing dissatisfaction, 29.4% reporting satisfaction, and 15.7% indicating partial satisfaction. While Jharkhand demonstrated higher satisfaction levels compared to UP, there remains a substantial portion of respondents who believe that improvements are necessary.

Table 3.56 Satisfaction with the Indoor and Outdoor Space Available at the AWC

States	Responses	Frequency	Percentage
	Yes	27	54.0
	Partially	17	34.0
	No	6	12.0
	Total	50	100.0
UP			
	Yes	11	22.0
	Partially	17	34.0

	No	22	44.0
	Total	50	100.0
Jharkhand			
	Yes	20	39.2
	Partially	11	21.6
	No	20	39.3
	Total	51	100.0

This table 3.56 provides valuable insights into individuals' satisfaction levels regarding the available space, both indoor and outdoor, in Anganwadi Centers (AWCs) across three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a majority (54.0%) expressed satisfaction with the available space in AWCs. Additionally, 34.0% reported partial satisfaction. Only a minimal 2.0% couldn't provide a definitive response. However, 10.0% expressed dissatisfaction with the available space. UP, on the other hand, faces a different scenario, with only 22.0% expressing satisfaction. An equal 34.0% reported partial satisfaction. A significant 38.0% expressed dissatisfaction. Moreover, 6.0% were uncertain about the available space. Jharkhand displayed a more balanced outlook, with 39.2% indicating satisfaction with the available space. However, there is still a significant proportion of dissatisfaction, with 37.3% expressing concerns. Additionally, 21.6% reported partial satisfaction. Only a minimal 2.0% of respondents were uncertain about the available space.

Challenges at AWC from the Supervisor's perspective

State	Item	Response	Frequency	Percentage
Delhi	complaints about	Yes	2	40
	early/late arrival of food	No	3	60
		Total	5	100
Uttar Pradesh	complaints about early/late	Not	8	100
	arrival of food	providing		
		any food		
		in AWCs		
		Total	8	100
Jharkhand	complaints about early/late	Yes	2	25.0
	arrival of food	No	3	37.5
		Cannot	3	37.7
		say		
		Total	8	100

Table 3.57 Complaint about Food Arrival Timing

The table 3.57 above provides insights into the percentage of complaints regarding the early or late arrival of food in Anganwadi Centers (AWCs) across three states: Delhi, Uttar Pradesh, and Jharkhand. In Delhi, 40% of the respondents reported frequent complaints about the timing of food delivery, while the majority, constituting 60%, did not express any such grievances.

Moving on to Uttar Pradesh, the data indicates that 50% of the respondents did not provide any response regarding food delivery timing while the other 50% did not complain. In Jharkhand, the situation is a bit more diverse, with 25% of respondents not offering any response, 37.5% choosing not to complain, and the remaining 37.5% remaining undecided or unable to express their views.

In summary, the data suggests that there are varying degrees of concern regarding the punctuality of food delivery in these three states. Delhi appears to have the highest level of complaints, while Uttar Pradesh has a substantial portion of respondents who did not provide a response. Jharkhand displays a more balanced distribution between those who did not complain, those who did not respond, and those who couldn't make up their minds. These findings can serve as a basis for further investigation into the factors contributing to these perceptions and the need for potential improvements in food delivery services in AWCs in these states.

State	Question	Response	Frequency	Percentage
	raised			
Delhi	time taken to	10-30	5	100
	reach AWCs	Minutes		
	from kitchen	Total	5	100
Uttar Pradesh	time taken to	Not providing	8	100
	reach AWCs	any food in		
	from kitchen	AWCs		
		Total	8	100
Jharkhand	time taken to	10-30	3	37.5
	reach AWCs	Minutes		
	from kitchen	30-60	3	37.5
		Minutes		
		1-2 Hours	2	25.0
		Total	8	100

Table 3.58 Time Taken for Food Delivery from Kitchen to AWC

The table 3.58 above provides a comparative analysis of the time it takes for food to reach Anganwadi Centers (AWCs) from the kitchen in three Indian states: Delhi, Uttar Pradesh, and Jharkhand. In Delhi, 100% of the cases report that it takes between 10 to 30 minutes for the food to reach AWCs.

State	Item	Response	Frequency	Percentage
Delhi	complaints about	Rarely	1	20
	quantity of food	No	4	80
	supplied at AWCs	Total	5	100
	received			
Uttar Pradesh	complaints about	Not		
	quantity of food	providing		
	supplied at AWCs	any food in		
	received	AWCs		
Jharkhand	complaints about	Often	2	25
	quantity of food	Rarely	1	12.5
	supplied at AWCs	No	5	62.5
	received	Total	8	100.0

 Table 3.59 Complaint About the Quantity of the Food

The table 3.59 above presents data on the percentage of Anganwadi Workers (AWWs) who have expressed concerns regarding the supply of food to the Anganwadi Centers (AWCs) in three Indian states: Delhi, Uttar Pradesh, and Jharkhand. This data sheds light on the variations in complaints related to the quantity of food supplied across these states.

In Delhi, the data reveals that a relatively low percentage, specifically 20% of AWWs, have rarely complained about the quantity of food supplied to AWCs. This indicates that the majority, or 80%, of AWWs in Delhi have not registered any complaints about the food supply, implying that they are generally satisfied with the quantity provided.

Moving on to Uttar Pradesh, we observe a different distribution of complaints. Here, 12.5% of AWWs have often raised concerns about the quantity of food supplied, while a larger proportion, 37.5%, have rarely expressed such complaints. A significant 50% of AWWs in Uttar Pradesh have not made any complaints about the food quantity, suggesting that a

majority are content with the supply, but a notable minority occasionally finds it lacking.

In contrast, the situation in Jharkhand presents another perspective. In this state, a comparativelyhigherpercentage,25% of AWWs, have often complained about the quantity of food, while only12.5% have rarely voiced such concerns. A substantial majority, amounting to 62.5%, have not complained at all about the food supply. This suggests that in Jharkhand, a notable proportion of AWWs are dissatisfied with the quantity of food provided, though the majority are content.

State	Item	Response	Frequency	Percentage
Delhi	complaints	Rarely	1	20
	about quality	No	4	80
	of food	Total	5	100
	supplied at			
	AWCs			
	received			
Uttar Pradesh	complaints	Rarely	3	37.5
	about quality	No	5	62.5
	of food	Total	8	100
	supplied at			
	AWCs			
	received			
Jharkhand	complaints	Often	1	12.5
	about quality	No	7	87.5
	of food	Total	8	100.0
	supplied at			
	AWCs			
	received			

Table 3.60 Complaint About the Quality of the Food

The table 3.60 above presents a comparative analysis of complaints made by Anganwadi Workers (AWWs) regarding the quality of food supplied at Anganwadi Centers (AWCs) in the states of Delhi, Uttar Pradesh, and Jharkhand. The data provides insights into the level of dissatisfaction expressed by AWWs in these three regions.

In Delhi, 20% of the AWWs rarely raised complaints about the food quality, while a significant80% reported no complaints. This suggests that the majority of AWWs in Delhi were relatively satisfied with the food quality at their AWCs.

Uttar Pradesh, on the other hand, exhibited a somewhat higher level of dissatisfaction compared to Delhi. Here, 37.5% of AWWs reported rarely complaining about food quality, while 62.5% indicated no complaints. Although a majority still did not complain, a

larger proportion of AWWs in Uttar Pradesh expressed occasional dissatisfaction.

Jharkhand presented a different scenario, with only 12.5% of AWWs reporting that they often complained about food quality, while a notable 62.5% did not have any complaints. This indicates that while a minority of AWWs in Jharkhand had frequent concerns, the majority were content with the food quality provided at their AWCs.

State	Item	Response	Frequency	Percentage
Delhi	Complaint		0	0
	about the	No	5	100
	Taste of the	Total	5	100
	Food			
Uttar Pradesh	Complaint	Often	1	12.5
	about the	Rarely	5	62.5
	Taste of the	No	2	25
	Food			
		Total	8	100
Jharkhand	Complaint	No	8	100
	about the			
	Taste of the	Total	8	100.0
	Food			

Table 3.61 Complaint about the Taste of the Food

The table 3.61presents data on complaints made by Anganwadi Workers (AWWs) regarding the refusal of food by children due to bad taste or repetitive meals in three Indian states: Delhi, Uttar Pradesh, and Jharkhand.In Delhi, the data shows that there were no complaints whatsoever in this regard. This indicates that in Delhi, AWWs did not report any issues related to children refusing food due to taste or repetition.In Uttar Pradesh, a different scenario emerged. Here,12.5% of the complaints from AWWs pertained to children refusing food, suggesting that this issue did arise occasionally. On the other hand, most complaints (62.5%) indicated that children rarely complained about the taste or repetitiveness of the food they were provided. Finally, in Jharkhand, a situation like Delhi was observed, with 100% of the data indicating that there were no complaints about children refusing food due to bad taste or repetitive meals.

		Correlation Coefficient	Sig. (2 tailed)	Ν
In the last three	Source of	.083**	.009	983
months, fever	drinking water			
cold pain	Kind of toilet	.175**	.000	992
(health of child)	facility			
	What	143**	.000	992
	precautions			
	with respect to			
	drinking water			
	No precaution	114**	.000	992
	Use clean	.052	.102	992
	feeding bottle			
	Washing hand	080*	.012	992
	with ash			
	Washing hands	.026	.418	992
	with mud before			
	handling food			
	or milk			
	Washing hands	035	.275	992
	with ash before			
	handling food			
	No precaution	024	.445	992
	Wash	158**	.000	992
	vegetables and			
	food items			
	Cover the	.172*	.000	992
	cooked food			
	Wash fruits and	129**	.000	992
	raw vegetable			
	No precaution	018	.577	992
	What	011	.735	992
	precautions do			
	you like after			
	using the toilet?			
	What	.036	.286	858
	precaution do			
	the child takes			
	after using the			
	latrine			

 Table 3.62 Relationship between Independent and dependent Variables

latrineNonparametric relations were computed between the different variables. From the abovetable, the relation between last three months fever cold pain and source of drinking water,kind of toilet facility, precautions with respect to drinking water, no Precaution, use of cleanfeeding bottle, washing hands with ash, washing hands with mud before handling food / milk,washing hands with ash before handling food, wash vegetables and food items, cover the

cooked food, wash fruits and raw vegetables, precautions in using the toilet, precaution child takes after using the latrine are found to be significant on child growth. These variables are majorly related to WASH practices and are inversely related to the health of child.

	Rate of falling ill		
	Correlation Coefficient	Sig. (2 tailed)	Ν
Source of drinking water	042	.232	823

Table 3.63Rate of falling ill and source of drinking water

Nonparametric relation was computed between the different variables, from above table it can be said that relation with Source of drinking water with rate of falling ill is inverse. This suggests the importance of source of drinking water on rate of falling ill.

Discussion and summing up

The results of the data analysis reveal significant differences in the sources of drinking water in the four states. It is found that Delhi and Uttar Pradesh have the highest percentages of households with a source of drinking water within their residences. In Jharkhand, public taps and public hand pumps are the most common sources of drinking water for households. Most of the respondent population do not take precautions w.r.t drinking water, whereas UP, Delhi and Jharkhand are having highest percentages and lowest in Bihar.

Delhi is showing the most promising picture with drinking water availability at Anganwadi centres (AWC) and lowest in Jharkhand. In the state of Delhi most of the AWCs have a tap with government water supply within their premises, in the state of Uttar Pradesh a large majority of AWCs rely on hand pumps and in Jharkhand many AWCs are depending on public tap.

It is notable that poor quality drinking water isn't found in Delhi state. The state of drinking water is mainly average in the U.P., Bihar and Jharkhand. The state of Delhi shows that a vast majority of AWCs have proper storage facilities and water is stored in clean and covered utensils and next lies the Jharkhand. It is reassuring to note that in the state of Jharkhand the highest percentage of AWCs report that they change the stored drinking water every day. In Jharkhand a maximum number of AWCs report that they have separate glasses for all the children.

Most of respondents in Bihar share that their child bathes everyday which accounts highest among all and Delhi stands at last in this category. The findings highlight that most of the children bath in their home bathrooms in Delhi and children take bath in pond/lake/river are highest in Jharkhand. Bihar has the highest percentage of respondents who share that their child take bath in public community bathrooms. It was found that most of the respondents share the soap/gel are mainly used by children for bathing, where Delhi stands with highest percentage and lowest in Bihar.

In Delhi, most of the population has access to their own flush toilets but in Bihar, Jharkhand, and Uttar Pradesh, the predominant toilet facility is a septic tank. The findings reveal that the majority of respondents wash their hands with soap after using the toilet, where Delhi has a high percentage and lowest in Jharkhand.

It is found that the majority of the children exhibit a practice of washing hands with soap after using latrine at home, where Delhi has significant percentage and Jharkhand stands at last in this category. The majority of AWWs in Delhi report that they promote sanitation behavior actively next Jharkhand and lowest in UP.

The toilet facility is available with water for flush in majority of AWW in Delhi, Jharkhand and UP generally reports toilet facility with water for flush less frequently available. The facility of cleaning oneself using water after defecation is quite high in Delhi and in UP it is lowest. Within the toilet facility, maintenance of cleanliness is a cause of concern. It is encouraging to note that Delhi shows the highest percentage, next is Jharkhand with clean toilets and Uttar Pradesh shows least percentage of cleanliness of toilet. In case the toilet is not available for children within the premises of AWC then the alternate arrangement for children in UP and Jharkhand are mostly separate corners provided by the AWW or there are community toilets, or they go to nearest house or go to roadside/outside the AWC, if toilet is not available for Children.

Hand washing with water and soap is an important determinant of personal hygiene. In Jharkhand and Delhi, the majority of AWCs have both soap and water for hand washing and UP has the lowest percentage. It is clear from the data that many times improper hand washing facility is available at the AWC which means either water supply is abrupt, or basin isn't there so the child can hardly use it. Also, in many AWCs in Jharkhand and UP there is absolutely no hand washing facility present. Next, the height of wash basin or washing facility is evaluated as it is important to find out if they are child friendly or not. The data reveals that the height of washbasins for washing hands is inappropriate for children attending AWCs which is a strong barrier in developing hand washing habits among children.

Bathing regularly is vital to a child's health. It removes dirt, sweat, sebum, germs and stimulates blood circulation. It helps to prevent irritations and rashes that would otherwise transform into infections resulting in sickness among children. Mostly AWW in Delhi and UP reported that children at their centres are taking bath daily with lowest in Jharkhand. It must be noted that the data collection took place during hot summers so high percentage of regularly bathing is reported else it may have been lower also, as most of the AWWs report that bathing is considered a method of cooling of rather than a regular exercise of personal hygiene.

Availability and usage of dustbin is crucial for instilling personal hygiene among children, so this aspect is explored further, and it was found that in Delhi dustbin was available with proper utilization in majority of AWCs whereas percentage of utilization of dustbin is surprisingly low in U.P. and Jharkhand. Primarily routine waste disposal and management is showing higher value in Jharkhand as compared to other states as generally people are found to give high value to cleanliness and waste disposal/ management at household and institutional level. The state of Jharkhand is showing clean and tidy AWCs in more incidences as compared to other states.

Proper ventilation is important for comfortable stay of children at AWC, and it is observed that adequate ventilation is present in majority of AWCs in Delhi, next in Jharkhand and U.P. Lighting at AWC is mostly either good or fair in Delhi, next comes Jharkhand while in U.P. percentage is a little low.

Personal grooming refers to the practices through which people clean and maintain their body parts. The AWWs must have washed and clean appearance to look good and for personal hygiene as well. Personal grooming helps in enhancing an individual's self-esteem and goes a long way in developing a confident personality. It was found that the majority of AWWs are in the good category of personal grooming in Delhi, next is Jharkhand and U.P. percentage is a little low. On a similar note, personal grooming of children is also central for their decent appearance and children will feel positive about themselves creating a pro-environment for learning new things. For children, it includes regular bathing, oral care, neat hair, and nails, wearing clean clothes, and more. Personal grooming fosters self-esteem, ensures good health, promotes hygienic habits, and enhances social interaction, which contributes to their overall development. Personal grooming of Children is given a priority in Delhi, and it is taking a backseat in U.P and Jharkhand.

Hand washing before and after a meal with soap and water may seem like a small action, but it's one that can have a significant impact on the health of a child. According to the Centre for Disease Control and Prevention (CDC), washing hands could protect about 1 of 3 young children who get sick with diarrhoea and 1 of 5 young children with respiratory infections like pneumonia. Cleaning the hands not only helps prevent children from catching germs, but from spreading them, too. It is encouraging to find that hand washing with soap before and after meal at AWCs is mandatorily present in children in all the three states.

The majority of respondents at home use clean utensils while preparing milk or cooking food with Delhi having the highest number and Jharkhand lowest.

Mothers in Delhi exhibit a practice of washing their hands with soap or ash before handling food, with the highest percentage and Bihar with lowest Percentage. The respondents in Delhi do not exhibit a practice of washing their hands with mud before handling food/milk with a highest percentage and respondents in Bihar exhibit a practice of washing their hands with mud or ash while handing with food/milk, which is highest among all states.

In Delhi, the majority of the population (households)has access to their own flush toilets but in Bihar, Jharkhand, and Uttar Pradesh, the predominant toilet facility is a septic tank. The findings reveal that the majority of respondents wash their hands with soap after using the toilet, where Delhi has a high percentage and lowest in Jharkhand.

The majority of mothers in all states breastfeed their child. The majority of mothers from all states feed their first milk to their child and Jharkhand leads this category with lowest in Bihar.It was found that during Pandemic food was cooked once in a day majorly in the states of UP, Bihar and Jharkhand, where Jharkhand leads the category and lowest in Delhi.

It is promising to find out that the weighing machines found at all the centres were working well, which is a marker of good program infrastructure. When probed further about the types

of weighing machine at the AWCs, the AWWs report that electronic scale type of weighing machine is most found in the AWCs in all the states.

Next it is checked that at how much time interval the weight measuring exercise is done at the AWCs. In this regard it can be clearly reported that in a sweeping majority of cases in Delhi, U.P. and Jharkhand the weight monitoring of children is done monthly, which is in consonance with the ICDS guidelines.

The ICDS guidelines say that the weight and height of children attending AWCs shall be measured regularly and updated on the Poshan Tracker App. The purpose of Poshan Tracker application is to provide a 360-degree view of the activities of the Anganwadi Centre (AWC), service deliveries of Anganwadi Workers (AWWs) and complete beneficiary management for pregnant women, lactating mothers, and children. When AWWs are probed about it then they reveal that weight, height and nutritional status are updated regularly on Poshan Tracker App in 100% cases in Delhi and almost all AWW in Jharkhand and Bihar. This is a huge marker of tech enabled programmatic success.

The MCP card i.e. Mother and Child Protection Card gives information on the immunization schedule and the doses of Vitamin A to be given to the child during the first five years. It acts as a tool to monitor the health and nutrition status of the pregnant woman and thereafter of the child till three years. It is seen that the AWWs keep the MCP cards of the children attending AWCs with them and update it regularly to keep track of immunization schedule of children. The majority of AWWs in Delhi and Jharkhand report that they update the MCP card regularly with a lesser percentage of AWWs in U.P.

The current ICDS growth chart uses the 2006 WHO child growth standards and uses z-scores for weight-for-age. This is because weight is the most sensitive indicator of growth; and while weight may decrease, height will not. The current standards show how children should grow (given optimum nutrition, healthcare and environmental) regardless of ethnicity, socioeconomic status, and type of feeding. In this regard AWWs report that the new ICDS growth chart is available to them with the highest percentage in Jharkhand, next in Delhi and lowest in U.P. However, AWWs also report that though they have the new ICDS growth chart, they are still not using it owing to lack of understanding towards it. This signifies an important training need and proper hand holding for AWWs. It is perplexing to note that the new ICDS growth chart is not available in few in U.P. and in Jharkhand. AWWs asked about the preferred method that they use to diagnose malnutrition among children attending AWCs. Upon comparison among all the states, mostly AWW are using growth chart and weight, height, and age. In Jharkhand only AWW also uses mid upper arm circumference. Stunting and Wasting are prominent in identifying children with malnutrition, but a notable percentage remains of the AWW in Delhi and Uttar Pradesh who either cannot provide answer or believe in some other way of identifying children with malnutrition. This clearly suggests some measures to be taken to overcome this gap in the knowledge and understanding of Aww.

In Delhi and UP the majority of AWCs lack separate kitchen facility with Jharkhand having maximum number of AWCs with separate kitchens. This indicates regional disparities in kitchen facilities. These findings underscore the substantial regional disparities in the availability and use of separate kitchen facilities. Such data is instrumental for policymakers and researchers to better understand the housing infrastructure in these states and formulate targeted interventions or improvements where necessary. Data provides insights into separate storage facility availability in Delhi, Uttar Pradesh (UP), and Jharkhand. Mostly in Delhi and UP, maximum number of AWCs do not have separate storage facilities, while Jharkhand shows improved status.

The data related to the steps taken by AW if a child is found to be malnourished in the states of Delhi, UP and Jharkhand depicts that there is a need to strengthen the knowledge and understanding of AWWs in all the three states to combat the problem of malnutrition in terms of the important measures to be taken if a child is found to be malnourished.

It was found that the maximum percentage of AWW who provide ORS to children suffering from diarrhoea are in the states of Jharkhand and UP and lowest percentage of AW is found in Delhi. Results of data analysis provide insights into the provision of iron-folic acid and Vitamin A with Jharkhand showcases an overwhelmingly positive picture, followed by UP and lowest in Delhi.

The data provides valuable insights into the practice of deworming children on a regular basis in AWCs with Jharkhand having highest percentage, followed by Delhi and lowest in UP. Jharkhand AWWs demonstrated the highest commitment to promoting exclusive breastfeeding followed by UP and lowest in Delhi. In Delhi, an overwhelming response reported towards conduction of complementary feeding sessions followed by UP and lowest in Jharkhand. AWWs regularly update the data on Poshan tracker calculator and this data on Poshan tracker calculator according to Supervisors in all the three states was helpful in assessing nutrition status of children. It was found that there is a limited supply of electricity in the centers of UP, Bihar & Jharkhand except Delhi.It was found that in Delhi 100% AWCs are providing Hot Cooked Meal. And In UP, majority of AWCs are having the THR facility and few are providing Hot Cooked meal. And in Jharkhand mostly AWCs provide hot cooked meals and very few THR.

Mostly in Delhi, AWCs are providing both Hot cooked meals and morning snacks but not in UP and Jharkhand. In Delhi, the data from supervisors indicates that 40% of the hot cooked meals served at AWC consist of *daliya*, another 40% comprises pulao, and the remaining 20% is khichdi. On the other hand, in Uttar Pradesh, no food items are provided as hot cooked meals at AWC, which is an interesting observation as it reflects a potential gap or difference in the implementation of the program compared to the other two states. In contrast, Jharkhand offers a different menu for hot cooked meals at AWC, with 50% of the meals consisting of dal and the remaining 50% being khichdi. This suggests that there is variation in the food choices and nutritional offerings between these states, possibly influenced by local dietary preferences, availability of resources, and the specific nutritional needs of the target beneficiaries.

Overall, this data obtained from supervisors highlights the diversity in the provision of hot cooked meals at AWC across Delhi, Uttar Pradesh, and Jharkhand. Such variations could be a result of regional differences, government policies, or local factors, and it underscores the importance of tailoring nutrition programs to meet the specific needs and preferences of each region's population while ensuring equitable access to nutritious meals for all beneficiaries.

Findings depict that Jharkhand state has a greater number of children suffering from malnutrition compared to Delhi and UP. This data is invaluable for policymakers and organizations working toward improving child nutrition, providing them with insights into where efforts can be targeted to enhance the overall functioning of AWCs.

On comparison of the results of the three states on the knowledge of AWWs about the norms for calories, Proteins, micronutrients for malnourished child and knowledge about the indications of drugs in the drug kit for, we can say that there is not much difference in all the three states and there is a need to provide AWWs knowledge about the norms for calories, Proteins, micronutrient for malnourished children and knowledge about the indications of drugs in the drug kit.

Mostly AWW have diet plan by ICDS but they do not follow due to the lack of supply of food. Mostly Centers are in the community so children could reach easily.

According to supervisors in Delhi, the majority of AWCs expressed dissatisfaction with the kitchen facilities followed by UP. In contrast, Jharkhand had the highest satisfaction rate among the three states. In UP the significant majority of AWCs expressed dissatisfaction with the storage facilities followed by Jharkhand and Delhi. In Delhi, a majority expressed satisfaction with the available space in AWCs followed by Jharkhand and UP.

According to supervisors in Delhi, majority of AWWs did not report frequent complaints about the timing offood delivery. In Jharkhand and UP, supervisors response regarding AWW complaints about food delivery timing, possibly indicate a lack of information or engagement on this issue.

The food delivery process in Delhi is quite efficient, with a consistent and relatively short delivery time. Majority of AWWs according to supervisors in Delhi have not registered any complaints about the food supply, implying that they are generally satisfied with the quantity provided followed by Jharkhand and lowest in UP.

According to supervisors, the majority of AWWs in Delhi were relatively satisfied with the food quality at their AWCs followed by Jharkhand and Bihar. In summary, the data from these three states suggests varying levels of satisfaction among AWWs regarding food quality at AWCs. Delhi appeared to have the highest satisfaction, with Uttar Pradesh having a slightly higher rate of dissatisfaction, and Jharkhand showing a relatively low level of frequent complaints. These findings could be valuable for policymakers and program administrators in improving the quality of food supplied at AWCs in these regions to meet the needs and expectations of the AWWs and, ultimately, the beneficiaries they serve.

Aganwaadicenters are neat & clean particularly in the state of Jharkhand AWC are very clean and with colourful paintings on the walls and also teaching learning materials on the walls displayed.

The data from these three states highlights regional variations in the perceptions and complaints of AWWs regarding the quantity of food supplied to AWCs. Delhi appears to have the lowest level of complaints, Uttar Pradesh falls in the middle with a mix of

opinions, and Jharkhand stands out with a higher percentage of AWWs expressing dissatisfaction.

This information could serve as a starting point for further analysis and policy making to improve foo dsupply to AWCs in these states, ensuring the nutritional needs of children and mothers are adequately met.

The data from these three states suggests varying levels of satisfaction among AWWs regarding food quality at AWCs. Delhi appeared to have the highest satisfaction, with Uttar Pradesh having a slightly higher rate of dissatisfaction, and Jharkhand showing a relatively low level of frequent complaints. These findings could be valuable for policymakers and program administrators in improving the quality of food supplied at AWCs in these regions to meet the needs and expectations of the AWWs and, ultimately, the beneficiaries they serve.

According to supervisors' responses, in Delhi, the data shows that there were no complaints from AWWs pertained to children refusing food due to bad taste or repetitive meals. This indicates that in Delhi, AWWs did not report any issues related to children refusing food due to taste or repetition. In Uttar Pradesh complaints from AWWs pertained to children refusing food, suggesting that this issue did arise occasionally. In Jharkhand, a situation like Delhi was observed, with 100% of the data indicating that therewerenocomplaintsaboutchildrenrefusingfoodduetobadtasteorrepetitivemeals. Delhi stands out as the state with no reported complaints in this area, suggesting that the food provided in Anganwadi Centers (AWCs) is well-received by the children. Uttar Pradesh and Jharkhand both have their unique dynamics, with Uttar Pradesh having some occasional complaints, albeit not very frequent, and Jharkhand, like Delhi, showing no concerns in this regard. These variations might be attributed to factors such as regional preferences, local cuisine, or the effectiveness of AWWs in addressing food-related issues.

Nutrition experts stressed the practice of maintaining an Optimum temperature at which can be food should be served and the time lapse between serving and cooking. The majority of experts said that optimum temperature should be 90F(Fahrenheit) to 120F and time lapse between cooking and serving should be two hours and one hour.

Nutrition Expert among these 4 states said that exclusive and continued breastfeeding is the important for children health and nutrition because breastfeeding is the only source of food to

the child just after the birth, continued breastfeeding also help to mothers for weight loss, mother's need to breastfeed to the child at least two years of birth. It will save children from non-communicable diseases, government need to promote actively breastfeeding in some rural area of these states, but present study found that in rural area in the four states there are many barriers in breastfeeding such as work schedule of working mothers mostly who are in the unorganized sector, less production of breast milk as mother herself doesn't get enough nutrition to produce milk. In rural area of Bihar and Jharkhand mother's think powder milk is healthier to breastfeed because advertisement on TV and road hoarding give effect on mothers thinking those uneducated. Cultural practices, advertisements promoting formula milk and overburdened working mothers are all the factors which affect breastfeeding.

Antenatal and post-natal care also affect the child's nutrition status because a good diet of mother pre- and post-delivery of child is important to the child. If the nutritional status of the mother is not good, then the child is affected with disease easily as compared to those mothers who have a good diet and essential amounts of nutrition. During antenatal care, mothers are counselled on the diet requirement during prenatal and post-natal period for the good health of the child.

Sanitation facilities are important for children according to nutrition experts. Sanitation facilities are also responsible for the malnutrition of the children because poor environment causes infection and viral disease risk in children life that's why we promoted clean and good sanitation facilities to the children. There is a need to promote WASH practices both at home and at AWCs.

The best practice adopted for preventing diarrhoeal diseases according to nutrition experts are use clean water, boil water when water is not clean, use properly cooked food, avoid eating street food, use wash practices and maintain hygienic environment.

According to nutrition experts, Hygiene must be maintained both at a personal level as well as environmental level. For maintaining personal hygiene bathing, brushing, nail cutting, hair cutting, wearing clean clothes, and washing hands before meals are some of the important practices. At the environmental level, daily cleaning of utensils, rooms, toilets and promoted hand wash practices. To ensure hygiene, both the family and the AWC must work towards it.

According to nutrition experts handwashing with mud/ash is largely practiced in rural areas. It was harmful because washing hands with mud and ash does not give proper hygiene. Using mud and ash doesn't clean the hands properly and germs remain on the child's hands and body. In rural India, where availability of soap is scarce, hand washing with ash is likely to be more effective than hand washing with water alone. Washing hands with mud is not safe at all because mud contains several microorganisms which can infect the hands of the person and may cause skin and digestive ailments.

Nutrition experts are of the view that parents and AWC need to ensure that children follow daily hygiene and hand washing practices. Sometimes parents are not aware of personal grooming and hygiene practices, hence there is a need to conduct regular awareness programs for parents at the AWCs.

Nutrition experts informed that the poor water quality plays a major role in children's skin and body diseases. Poor water quality and bathing affect the children's skin and hair loss, many skins diseases are caused due to quality of water. Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid, and polio.

According to the experts, conventional methods used in rural areas where children use neem sticks two times a day are very effective to maintain dental health of the child. in urban areas, using toothpaste by properly brushing the teeth twice a day is the best way to maintain the dental hygiene. Tooth powder, use finger for brushing, charcoal powder is harmful for teeth as it increases the risks of germs, calories, and cavity in teeth.

Pure and clean water plays a major role in the child's health status and for adult health. According to the nutrition experts unsafe drinking water effect the children's health, it can cause many diseases like Diarrhoea, stomach infection etc. The simplest method to purify water is to boil it before use.

The best method for purifying the water according to expert in absence of filter is to boil the water before use. In case boiling is not possible then putting chlorine tablets in the water pot also disinfects water which is also safe for drinking. Using packaged water for drinking is also a solution but it is not cost effective for low-income group families. The nutrition experts said that the only way to check water quality is to observe the water in a glass tumbler and check it for its color, smell, taste, and insoluble particles. If the water does not appear good for drinking, then water should be filtered or boiled and then consumed.

According to the experts, stored water should be changed after two days. But in case the water is open for more than 2 hours, then it is not safe for drinking and should be changed. Water should be kept in clean utensils and at the time of changing water, utensils should be washed properly.

Summing up

From the findings of the data analyzed it may be concluded that washing practices are very important both at home and at AWC for children. The role of access to WASH facilities on child nutrition outcome is also shown to be significant.

Nonparametric test computed on the different variables to find the relationship between rate of falling ill and health with the WASH practices showed a negative correlation between rate of falling ill and WASH practices at home. Combined access to improved water, sanitation, hygiene, handwashing was associated with reduced child illness and reduced child growth failure. Child's immunization record and nutritional status are negatively correlated with the child illness and health hence it may be concluded that regular updates on immunization, health, and nutritional status of children prerequisite for effective programme implementation.

AWCs lack separate kitchen facility, storage facility, electricity supply, proper water facility, toilet facility, wash basins which calls the attention of policymakers and researchers to better understand the housing infrastructure in these states and formulate targeted interventions or improvements where necessary.

There is a need to strengthen the knowledge and understanding of AWWs in all the three states to combat the problem of malnutrition in terms of the important measures to be taken if a child is found to be malnourished. It is important to provide AWWs knowledge about the ICDS growth charts, norms for calories, Proteins, micronutrient for malnourished children, knowledge about the indications of drugs in the drug kit etc. Training needs of the AWWs must be given a significant place in programme planning ang implementation.

It may also be concluded that proper measures must be taken in terms of delivery and reach of supplementary nutrition to all children, specially malnourished children. Hot cooked meals with quality assurance must be an important part of the ICDS programme to combat the problem of malnutrition. Moreover, separate diets for malnourished children need proper planning and implementation.

Chapter 4

IMPLEMENTATION PRACTICES AND GAPS IN ICDS SERVICES

Content of the Chapter

- Type of Supplementary Nutrition
- Stakeholders in ICDS
- Perspective of AWW on Implementation practices and gaps
- Perspective of Supervisors on Implementation practices and gaps tables
- Major Findings and Discussion on Implementation practices and gaps from the AWW and Supervisor's perspectives
- Perspectives of CDPOs on Program Implementation and Existing Gaps
- From the findings of the study related to implementation practices and gaps in the ICDS program
- CONCLUSIONS

For addressing malnutrition in children and complete welfare and development of children, the Government of India has launched Integrated Child Development Services (ICDS) in 1975 as a pilot project which was later extended to the entire country. ICDS is a Centrally Sponsored flagship program of the Government of India aimed at providing holistic early childhood care and development services to children under the age of six years, pregnant women, and lactating mothers.

The concept of providing a package of services is based primarily on the consideration that the overall impact will be much larger if the different services develop in an integrated manner as the efficiency of a particular service depends upon the support it receives from related services. The services under the ICDS scheme are provided at the platform of Anganwadi Centre (AWC). The ICDS is a universal but self-selecting scheme and is open to all children under six years of age and Pregnant & Lactating Mothers, irrespective of their economic and social status.

The Ministry of Women and Child Development (2013) reveals that the scheme is implemented through the States/UTs on a cost sharing basis in the ratio of 50:50 for supplementary nutrition (SNP) and 90:10 for other components except in the case of Northeastern States where the share of Central and State Government is in the ratio of 90:10 for all the components including SNP.

Type of Supplementary Nutrition:

Children in the age group 0 - 6 months: For Children in this age group, States/ UTs may ensure continuation of current guidelines of early initiation (within one hour of birth) and exclusive breast-feeding for children for the first 6 months of life.

Children in the age group 6 months to 3 years: For children in this age group, the existing pattern of Take-Home Ration (THR) under the ICDS Scheme will continue. However, in addition to the current mixed practice of giving either dry or raw ration (wheat and rice) which is often consumed by the entire family and not the child alone, THR should be given in the form that is palatable to the child instead of the entire family.

Children in the age group 3 to 6 years: For the children in this age group, State/ UTs have been requested to make arrangements to serve Hot Cooked Meal in AWCs and mini-AWCs under the ICDS Scheme. Since the child of this age group is not capable of consuming a meal of 500 calories in one sitting, the States/ UTs are advised to consider serving more than one meal to the children who come to AWCs. Since the process of cooking and serving hot cooked meal takes time, and in most of the cases, the food is served around noon, States/ UTs may provide 500 calories over more than one meal. States/ UTs may arrange to provide a morning snack in the form of milk/banana/ egg/ seasonal fruits/ micronutrient fortified food etc.

The ICDS Scheme envisaged implementation of Projects through Voluntary Organizations, Local Bodies, Panchayati Raj Institutions, Social Welfare Board (where these are functioning efficiently) etc., with a view to derive community support. The States have been given the autonomy, within the overall framework of the ICDS Scheme to entrust projects to a voluntary organization including NGOs for which grants to them would be provided by the concerned State Government/UT Administration.

There will be 1 Anganwadi centre (AWC) for a population of 400-800; 2 AWCs for 800-1600; 3 AWCs for 1600-2400 and thereafter in multiples of 800 -1 AWC. Besides, for the habitations having population lower than the floor prescribed in the population norms, a mini AWC can be set up for a population of 150-400 (150-300 in tribal/desert/hilly/riverine areas).

With a view to strengthening the ICDS scheme, it has been decided to assign management and operation of up to 10% projects to PRIs/NGOs/voluntary organizations under the restructured ICDS. In the existing monitoring mechanism, monthly & half yearly progress reports are prescribed at Anganwadi and Project level in States/UTs. In addition, Government has introduced 5-tier monitoring and review mechanism at National, State, District, Block and Anganwadi Levels for which guidelines. Under these guidelines, the District and Block level Committees closely monitor inter-alia regularity of functioning of AWCs, monitoring and supervision visits to AWC by ICDS functionaries etc. and Anganwadi level Committee is required to review and take, as well as suggest action, to improve delivery of services at the AWC etc.

While ICDS has made significant strides in improving the well-being of children and mothers, there are still gaps in implementation practices and services delivery that need attention. India's high prevalence of stunting, wasting, and anaemia continues to pose public health risks for children and women. There is an urgent need to review the Integrated Child Development Services (ICDS), to tackle this. As already explained, the ICDS targets children aged 0-6 years, pregnant women, and lactating mothers; addresses non-formal pre-school education; and breaks the cycle of malnutrition, morbidity, and mortality.

I. Stakeholders in ICDS:

The ICDS team comprises the Anganwadi Workers, Anganwadi Helpers, Supervisors, Child Development Project Officers (CDPOs) and District Program Officers (DPOs). Anganwadi Worker, a lady selected from the local community, is a community based frontline honorary worker of the ICDS Program. She is also an agent of social change, mobilizing community support for better care of young children, girls, and women. Besides, the medical officers, Auxiliary Nurse Midwife (ANM) and Accredited Social Health Activist (ASHA) form a team with the ICDS functionaries to achieve convergence of different services.
Training and capacity building is the most crucial element in the ICDS Scheme, as the achievement of the Program goals largely depends upon the effectiveness of frontline workers in improving service delivery under the Program. Since inception of the ICDS scheme, the Government of India has formulated a comprehensive training strategy for the ICDS functionaries. Training under ICDS scheme is a continuous Program and is implemented through 35 States/UTs and National Institute of Public Cooperation and Child Development (NIPCCD) and its four regional centres.

1.1 State Level:

At the State Level, the secretary of the Department of Women and Child Development, Social Welfare, Health, Rural Development, Community Development, Tribal Welfare, or any other nodal department designated by the state government is responsible for the implementation of the Program within the state. At the state level ICDS cells have been set up to monitor the Program. Within the state, the administration of ICDS is decentralized at the district, block, and village levels, and Anganwadi Centre. Various quantitative inputs captured through CDPO's MPR (monthly progress report)/HPR (half yearly progress report) are compiled at the State level for all Projects in the State. No technical staff has been sanctioned for the state for Program monitoring, the department of women and child development takes care of ICDs by various officers. CDPO's MPR capture information on number of beneficiaries for supplementary nutrition, pre-school education, field visit to AWCs by ICDS functionaries like Supervisors, CDPO/ ACDPO etc., information on number of meetings on nutrition and health education (NHED) and vacancy position of ICDS functionaries etc.

I.2 District level:

At the District Level, the district officer (Collector/District Development and Program Officer/Deputy Commissioner) is responsible for coordination and implementation of the scheme. The administrative unit of the ICDS within the districts is called an ICDS project. An ICDS project covers a community development block in a rural area, a tribal development block in a tribal area, and a group of slums in an urban area. Districts having five or more ICDS projects have ICDS monitoring cells.

1.3 Block Level:

At block level, Child Development Project Officer (CDPO) is the in-charge of an ICDS Project. CDPO's MPR and HPR have been prescribed at block level. These CDPO's MPR/ HPR formats have one-to-one correspondence with AWW's MPR/ HPR. CDPO's MPR consists of vacancy position of ICDS functionaries at block and AWC levels. At block level, no technical post of officials has been sanctioned under the scheme for monitoring. However, one post of statistical Assistant is sanctioned at block level to consolidate the MPR/ HPR data. In between CDPO and AWW, there exists a supervisor who is required to supervise 25 AWC on an average. CDPO is required to send the Monthly Progress Report (MPR) by 7th day of the following month to State Government. Similarly, CDPO is required to send Half-yearly Progress Report (HPR) to State by 7th April and 7th October every year.

1.4 Village Level (Anganwadi Level):

At the village level, the package of health, nutrition and educational services are provided at the Anganwadi centre (AWC) located in the village or urban slum area the Program serves. Anganwadi literally means "courtyard." AWC is the focal point for ICDS service delivery that normally operates daily for four hours except Sundays and holidays. The Anganwadi worker (AWW), a woman, is the key functionary of ICDS at the grassroots level. AWW is a voluntary worker and paid an honorarium basis per every month, usually recruited from within the local community. She is assisted by an Anganwadi helper (AWH) who receives a monthly honorarium. At the grass-root level, delivery of various services to target groups is given at the Anganwadi Centre (AWC). In the existing Management Information System, records and registers are prescribed at the Anganwadi level i.e. at village level. The Monthly and Half-yearly Progress Reports of Anganwadi Worker have also been prescribed. The monthly progress report of AWW capture information on population details, births and deaths of children, maternal deaths, number of children attended AWC for supplementary nutrition and pre-school education, nutritional status of children by weight for age, information on nutrition and health education and home visits by AWW. Similarly, AWW's Half yearly Progress Report capture data on literacy standard of AWW, training details of AWW, increase/ decrease in weight of children, details on space for storing ration at AWC, availability of health cards, availability of registers, availability of growth charts etc. AWW is required to send these Monthly Progress Report (MPR) by 5th day of following month to CDPO' In-charge of an ICDS Project. Similarly, AWW is required to send Half-yearly Progress Report (HPR) to CDPO by 5th April and 5th October every year.

In this chapter an attempt is made to highlight the implementation practices about ICDS and the gaps that are found in the study. A few of the well-established gaps to implementation include lack of infrastructure, quality of services, community participation, data management and utilization, lack of supportive supervision, financial allocations etc. Descriptive accounts are presented from the AWWs, Supervisors (frontline workers) and CDPOs i.e. program staff (intermediary level) to explore about the service delivery and existing gaps in all the states.

I. Perspective of AWW on Implementation practices and gaps

States	Responses	Frequency	Percentage
Delhi	Cannot say	2	4.0
	No measures are taken	3	6.0
	Separate diet plans are made	38	76.0
	Others	7	14.0
	Total	50	100.0
UP	cannot say	3	6.0
	No measures are taken	2	4.0
	Separate diet plans are made	36	72.0
	Others	9	18.0
	Total	50	100.0
Jharkhand	No measures are taken	3	5.9
	separate diet plans are made	40	78.4
	Others	8	15.7
	Total	51	100.0

Table 4.1 Measures taken to overcome the problem of malnutrition in Children

The table 4.1 presents data on the measures taken to address the issue of malnutrition in children in three different states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 76 percent of respondents mention separate diet plans, while 6 percent believe no measures exist, 4 percent are uncertain, and 14 percent provide diverse responses. In UP, 72 percent of participants report separate diet plans, 6 percent uncertainty, 4 percent indicating no action, and 18 percent offering various strategies. In Jharkhand, 78.4 percent favor separate diet plans, 5.9 percent assert no action, and 15.7 percent propose alternative measures.

Table 4.2 Status of 1	regular supj	oly of raw	materials/food
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States	Responses	Frequency	Percentage
Delhi	cannot say	3	6.0
	Yes, regularly supplied	37	74.0

	Yes, but limited and not regular	3	6.0
	No	7	14.0
	Total	50	100.0
UP	Yes, regularly supplied	30	60.0
	Yes, but limited and not regular	11	22.0
	No	9	18.0
	Total	50	100.0
	Yes, regularly supplied	30	60.0
Jharkhand	Yes, regularly supplied	20	39.2
	Yes, but limited and not regular	20	39.2
	No	11	21.6
	Total	51	100.0

The table 4.2 provides an overview of food supply in Anganwadi Centers (AWCs) in Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 74% report regular food supply, 6% mention limited and irregular supply, and 14% indicate no regular supply. In UP, 60% note regular supply, 22% report limited and irregular supply, and 18% state no regular supply. Jharkhand shows an even split with 39.2% for regular supply, 39.2% for limited and irregular supply, and 21.6% for no regular supply, highlighting variations in food provision across the states.

States	Responses	Frequency	Percentage
Delhi	cannot say	2	4.0
	Good	40	80.0
	Average	8	16.0
	Total	50	100.0
UP	cannot say	3	6.0
	Good	19	38.0
	Average	17	34.0
	Not good	10	20.0
	Other	1	2.0
	Total	50	100.0
Jharkhand	Good	30	58.8
	Average	20	39.2
	Not good	1	2.0
	Total	51	100.0

Table 4.3 Quality of food given to children

The table 4.3 provides valuable insights into the perceived quality of food provided to children in Anganwadi Centers (AWCs) across three diverse states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a significant 80% of respondents view the quality of food as

good, with only a small fraction (4%) unable to provide an opinion. Similarly, Jharkhand receives positive feedback, as 58.8% of respondents consider the food quality good, while a mere 2% express dissatisfaction. However, the situation in UP is more varied, with 38% rating the quality as good, 34% perceiving it as average, and 20% finding it not good. Additionally, 6% of UP respondents could not form an opinion, and 2% fall into the "other" category.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Included	26	52.0
	Not Included	20	40.0
	Total	50	100.0
UP	cannot say	3	6.0
	Included	7	14.0
	Not Included	40	80.0
	Total	50	100.0
Jharkhand	Included	27	52.9
	Not Included	24	47.1
	Total	51	100.0

Table 4.4 Specific diet plans for the identified Malnourished Children

Upon comparison of data across these states, the data shows that 52 percent of the AWCs in Delhi include some specific diet plans for the identified malnourished Children, only 14 of the AWCs in UP include some specific diet plans for the identified malnourished Children and 52.9 percent of the AWCs in Jharkhand include some specific diet plans for the identified malnourished Children.

States	Responses	Frequency	Percentage
Delhi	cannot say	7	14.0
	Last 15 days	1	2.0
	Last 1 month	10	20.0
	last 2 months	12	24.0
	last 3 months	8	16.0
	last 6 months	9	18.0
	Any other	3	6.0
	Total	50	100.0
UP	cannot say	3	6.0
	Last 15 days	28	56.0
	Last 1 month	16	32.0
	last 2 months	2	4.0

	last 6 months	1	2.0
	Total	50	100.0
Jharkhand	Last 15 days	23	45.1
	Last 1 month	22	43.1
	last 2 months	4	7.8
	last 6 months	2	3.9
	Total	51	100.0

The table 4.5 offers insights into the timing of the last Village Health and Nutrition Day (VHND) in three distinct Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, there appears to be some uncertainty regarding the timing of the last VHND, with 14.0% of respondents unable to provide information. Among those who did, the most common response indicated that the last VHND occurred in the last 2 months, at 24.0%. UP, on the other hand, demonstrates a clearer awareness of recent VHNDs, with only 6.0% of respondents unable to provide information. A substantial 56.0% of respondents reported that the last 15 days, while 32.0% stated it took place in the last month. Jharkhand stands out as having a strong awareness of recent VHNDs, with 45.1% of respondents reporting that the last VHND occurred in the last 15 days and 43.1% in the last month.

States	Responses	Frequency	Percentage
Delhi	cannot say	4	8.0
	Last 15 days	4	8.0
	Last 1 month	33	66.0
	last 2 months	9	18.0
	Total	50	100.0
UP	cannot say	5	10.0
	Last 15 days	30	60.0
	Last 1 month	13	26.0
	last 2 months	2	4.0
	Total	50	100.0
Jharkhand	Last 15 days	23	45.1
	Last 1 month	25	49.0
	last 2 months	2	3.9
	last 3 months	1	2.0
	Total	51	100.0

Table 4.6 Last Mahila Manda

The table 4.6 provides insights into the timing of women's group meetings in three diverse Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, there is notable awareness of the timing of the last Mahila Mandal meeting, with 66.0% of respondents indicating it occurred in the last month. An additional 18.0% reported it took place within the last 2 months, while 8.0% could not specify the timing. In UP, the majority of respondents (60.0%) reported that the last meeting happened in the last 15 days, demonstrating a relatively recent gathering. Another 26.0% mentioned the last month, while a smaller percentage (4.0%) referred to a timeframe of the last 2 months. Only 10.0% were unable to provide specific information. Jharkhand presents a balanced perspective, with 49.0% of respondents stating that the last Mahila Mandal meeting occurred in the last month and 45.1% reporting it took place in the last 15 days. A smaller proportion (3.9%) referred to the last 2 months, and 2.0% mentioned the last 3 months as the timing.

States	Responses	Frequency	Percentage
Delhi	different times	5	10.0
	same time	45	90.0
	Total	50	100.0
UP	cannot say	16	32.0
	different times	6	12.0
	same time	6	12.0
	often differently	16	32.0
	any other	6	12.0
	Total	50	100.0
Jharkhand	different times	34	66.7
	same time	13	25.5
	often differently	4	7.8
	Total	51	100.0

Table 4.7 status of receiving supplementary nutrition/MDM and morning snacks

This table 4.7 provides data on the timing of Supplementary nutrition/Mid-Day Meals (MDM) and morning snacks in Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 90.0% of respondents receive MDM and morning snacks simultaneously. In UP, practices are diverse, with 32.0% uncertain about timing, 12.0% receiving meals separately, 12.0% simultaneously, and 32.0% experiencing variable timings. Jharkhand differs significantly, with 66.7% reporting separate meal timings, a preference distinct from Delhi's synchronized approach. Additionally, 25.5% receive both meals together, while 7.8% note occasional variations.

Table 4.8 Sati	sfaction with	the supply	r of raw f	food material
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States	Responses	Frequency	Percentage
Delhi	Yes	28	56.0
	Partially	7	14.0
	No	15	30.0
	Total	50	100.0

UP	cannot say	1	2.0
	Yes	29	58.0
	Partially	8	16.0
	No	12	24.0
	Total	50	100.0
Jharkhand	Yes	19	37.3
	Partially	8	15.7
	No	24	47.1
	Total	51	100.0

This table provides valuable insights into individuals' satisfaction levels regarding the supply of raw food materials for children in Anganwadi Centers (AWCs) across three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, the majority (56.0%) expressed satisfaction with the supply of raw food materials for children in AWCs, indicating a positive perception of the food distribution system. However, 14.0% reported partial satisfaction, suggesting potential room for improvement. Conversely, 30.0% of respondents voiced dissatisfaction with the supply, highlighting the need for attention to address their concerns. In Uttar Pradesh, only small percentages (2.0%) were uncertain about food material supply, indicating a relatively clear perception. The majority (58.0%) expressed satisfaction, while 16.0% reported partial satisfaction. Nonetheless, a notable 24.0% expressed dissatisfaction, emphasizing the importance of addressing supply-related issues in the state's AWCs. Jharkhand presented a different scenario, with a considerable proportion (47.1%) expressing dissatisfaction with the supply of raw food materials. While 37.3% reported satisfaction and 15.7% indicated partial satisfaction.

States	Responses	Frequency	Percentage
Delhi	Yes	46	92.0
	Partially	4	8.0
	Total	50	100.0
UP	cannot say	9	18.0
	Yes	5	10.0
	Partially	1	2.0
	No	34	68.0
	any other	1	2.0
	Total	50	100.0
Jharkhand	Yes	30	58.8
	Partially	9	17.6
	No	12	23.5
	Total	51	100.0

Table 4.9 Satisfaction with the quality of morning snacks

This table 4.9 provides valuable insights into individuals' satisfaction levels regarding the quality of morning snacks in Anganwadi Centres (AWCs) across three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, an overwhelming majority (92.0%) expressed high satisfaction with the quality of morning snacks served in AWCs. Only a minor 8.0% reported partial satisfaction. UP, however, faces a starkly different scenario. A significant portion (68.0%) expressed dissatisfaction with the quality of morning snacks. Additionally, a noteworthy 18.0% were uncertain, highlighting the need for clearer communication and quality assurance in snack provision. Only a small percentage (10.0%) reported satisfaction, and a mere 2.0% expressed partial satisfaction. Jharkhand displayed a more balanced outlook, with 58.8% of respondents indicating satisfaction with the quality of morning snacks. However, there is still a significant proportion of dissatisfaction, suggesting areas for potential enhancement.

States	Responses	Frequency	Percentage
Delhi	cannot say	1	2.0
	Yes	41	82.0
	Partially	8	16.0
	Total	50	100.0
UP	cannot say	10	20.0
	Yes	8	16.0
	Partially	1	2.0
	No	30	60.0
	any other	1	2.0
	Total	50	100.0
Jharkhand	Yes	31	60.8
	Partially	9	17.6
	No	11	21.6
	Total	51	100.0

Table 4.10 Satisfaction with the quality of cooked meal provided to the Children

This table 4.10 provides valuable insights into individuals' satisfaction levels regarding the quality of cooked meals in Anganwadi Centres (AWCs) provided to the children across three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, a large majority (82.0%) expressed high satisfaction with the quality of cooked meals served in AWCs. Only a small 16.0% reported partial satisfaction, suggesting room for improvement. Additionally, a minimal 2.0% couldn't provide a definitive response. In contrast, Uttar Pradesh (UP) faces a

significant challenge, with 60.0% expressing dissatisfaction with the meal quality. Additionally, 20.0% were uncertain. Only a small percentage, 16.0%, reported satisfaction, and an equally minimal 2.0% expressed partial satisfaction. Jharkhand displayed a more balanced outlook, with 60.8% of respondents indicating satisfaction with the quality of cooked meals. However, there is still a significant proportion of dissatisfaction, with 21.6% expressing concerns. Additionally, 17.6% reported partial satisfaction, suggesting areas for potential enhancement.

States	Responses	Frequency	Percentage
Delhi	cannot say	11	22.0
	Yes	24	48.0
	Partially	11	22.0
	No	4	8.0
	Total	50	100.0
UP	cannot say	1	2.0
	Yes	14	28.0
	Partially	12	24.0
	No	23	46.0
	Total	50	100.0
Jharkhand	Yes	24	47.1
	Partially	5	9.8
	No	22	43.1
	Total	51	100.0

Table 4.11Satisfaction with the services provided to your AWC

This table 4.11 provides valuable insights into individuals' satisfaction levels regarding the services offered by Anganwadi Centers (AWCs) across three Indian states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, respondents exhibited a balanced distribution of responses. A notable 48.0% expressed satisfaction with the services. An additional 22.0% reported partial satisfaction. Only 8.0% expressed dissatisfaction. However, 22.0% could not definitively state their satisfaction level. UP, on the other hand, faces a more significant challenge. While 28.0% expressed satisfaction with the services, a substantial 46.0% indicated dissatisfaction, highlighting substantial concerns and the need for improvement. An additional 24.0% reported partial satisfaction, indicating areas requiring attention. Only a minimal 2.0% were uncertain about their satisfaction level. Jharkhand exhibited a mixed perception of satisfaction with the service. A slight majority, 47.1% of respondents, expressed satisfaction. However, a notable 43.1% expressed dissatisfaction. Additionally, 9.8% reported partial satisfaction.

II. Perspective of Supervisors on Implementation practices and gaps:

The data outlines the purposes for which supervisors were required to visit the AWCs. The collected data shows that in Delhi 80% supervisors checked all the records and activities and 1.0% visited to provide counseling to parents and workers. While in UP 62.5% checked all the record and activities and 37.5% visited to provide counseling to parents and workers and in Jharkhand 75.0% checked all record and activities and updated information to the center and Anganwadi workers and 12.5% visited to provide counseling to parents and worker.

State	Different parameters for supplementary nutrition	Frequency	Percentage
Delhi	Quantity and quality of food	4	80.0
	Timely distribution	1	20.0
	Total	5	100.0
UP	quality and quantity of food	3	37.5
	timely distribution	1	12.5
	proper storage and serving of food	3	37.5
	other parameters	1	12.5
	Total	8	100.0
Jharkhand	Quantity and quality of	7	87.5
	food		
	Timely distribution	1	12.5
	Total	8	100.0

Table 4.12 Different parameters for supplementary nutrition

The table 4.12 shows different parameters for supplementary nutrition. In the above table the collected data state that in Delhi state 80.80% AWCs supervisor reported that quality and quantity of food are important parameters for supplementary nutrition and 20% reported that timely distribution is important parameter. While in UP state 37.5% AWCs supervisor reported that quality and quantity of food are important parameter for supplementary nutrition and 12.5% AWCs supervisor reported that timely distribution are important parameter for supplementary nutrition and 37.5% reported that proper storage and serving of food are important parameters for supplementary nutrition and 12.5% reported that proper storage and serving of food are important parameters for supplementary nutrition and 12.5% reported that proper storage and serving of food are important parameters for supplementary nutrition and 12.5% reported that proper storage and serving of food are important parameters are

important for supplementary nutrition. And in Jharkhand state 87.5% AWCs supervisor reported that quantity and quality of food are important parameter for supplementary nutrition and 12.5% AWCs supervisor are reported that timely distribution of food are important parameter for supplementary nutrition.

State	component related to nutrition during early childhood during training	Frequency	Percentage
Delhi	diet plan, centre's activities	5	100.0
UP	diet plan, centre's activities	5	62.5
	Knowledge of ration distribution	3	37.5
	process, immunization camp		
	Total	8	100.0
Jharkhand	diet plan, centre's activities	5	62.5
	Knowledge of ration distribution	3	37.5
	process, immunization camp		
	Total	8	100.0

 Table 4.13Component related to nutrition during training

The data in above table 4.13 states that in Delhi 100% AWCs reported that in ECCE training diet plans and centre's activities on nutrition are important components related to nutrition. While in UP 37.5% AWCs reported that knowledge of ration distribution process, immunization camp are important components related to nutrition during early childhood during training Program and 62.5% ECCE training is on diet plan, centre's activities are important component related to nutrition during early childhood. And in Jharkhand 62.5% AWCs supervisor reported that ECCE training and diet plan, centers activities are important component related to nutrition during early childhood and 37.5% knowledge ration distribution process, immunization camp training are important component related to nutrition during early childhood and 37.5% knowledge ration distribution process, immunization camp training are important component related to nutrition during early childhood and 37.5% knowledge ration distribution during early childhood.

Table: 4.14 O	rganize health	and nutrition	days in	the village
	0		•	

State	Do they organize health and nutrition days in village	Frequency	Percentage
Delhi	Yes	5	100.0
UP	Yes	8	100.0
Jharkhand	Yes	8	100.0

In the above table 4.14, states that in Delhi 100% AWCs reported that they have organized health and nutrition day in the village. And while in UP 100% % AWCs reported that they have organized health and nutrition day in the village. And in Jharkhand 100% of AWCs reported that they have organized health and nutrition day in the village.

State	If yes when was the last time you organized VHND	Frequency	Percentage
Delhi	Last 15 days before	2	20.0
	Last 1 to 2 months	1	40.0
	Last 6 months	2	20.0
	Total	5	100.0
UP	Last 15 days before	3	37.5
	Last 1 to 2 months	3	37.5
	Last 6 months	2	25.0
	Total	8	100.0
Jharkhand	Last 15 days before	3	37.5
	Last 1 to 2 months	4	50.0
	Last 6 months	1	12.5
	Total	8	100.0

Table 4.15Last time you organized VHND

The above table 4.15, it states that in Delhi 20% AWCs supervisors reported that they organized VHND 15 days before the collection of data. 20% organized within the last 1-2 months and 40% organized in the last 6 months while in UP 37.5% AWCs supervisor organized VHND 15 days before the collection of data. 37.5% organized within last 1-2 months and 25% organized in the last 6 months and in Jharkhand 37.7% AWCs supervisors reported that they organized VHND 15 days before the collection of data. 50% organized within the last 1-2 months and 12.5% organized in the last 6 months from the day of collection of data.

State	What was the discussion last VHND	Frequency	Percent
Delhi	No response	7	80.0
	Discuss about diet of	1	20.0
	malnutrition children		

	Total	8	100.0
UP	No response	4	50
	Discuss about diet of	2	25.0
	malnutrition children		
	Counseling of parents discuss	2	25.0
	the immunization and		
	vaccination camp		
	Total	8	100.0
Jharkhand	Discuss about health and policy	5	62.5
	AWC's		
	Discuss about diet of	1	12.5
	malnourished children		
	Counselling of parents	2	25.0
	Total	8	100.0

The above table 4.16 shows that the collected data in Delhi state 20.0% of AWCs Supervisor reported that they discussed about diet of malnourished children in last VNDH and 80% AWCs supervisors did not responded about the discussion in the last VNDH. While in UP state 50% AWCs supervisors discussed about diet of malnourished children in last VNDH and 25% AWCs supervisors responded that parents counselling was held and the rest of the 25% responded that they had discussion about the immunization and vaccination camp. In Jharkhand state 62.5% AWCs supervisors discussed about diet of malnourished children and 25% responded that discussed about diet of malnourished children and 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that discussed about diet of malnourished children and 25% responded that discussed about diet of malnourished children and 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that discussed about diet of malnourished children and 25% responded that sets of the 25% responded that set

Table 4.17 Gaps and challenges in the context of nutrition and food distribution in AWCs

State	Gaps and challenges in the	Frequency	Percentage
	context of nutrition and food		
	distribution in AWCs		
Delhi	Never face any problem	3	60.0
	Family pressure they need 3	1	20.0
	times meal.		
	Shortage of ration from state &	1	20.0
	upper authority		
	Total	5	100.0
UP	Never face any problem	3	37.5
	Shortage of ration from state	2	25.0
	and upper authority		
	Children demand their favorite	3	37.5
	fruits and meals; Quality and		

	quantity lists low		
	Total	8	100.0
Jharkhand	Never face any problem	2	25.0
	Family pressure they need 3	2	25.0
	times meal		
	Shortage of ration from state	1	12.5
	and upper authority		
	Children demand their favorite	3	37.5
	fruits and meals, and quantity		
	and quality list low		
	Total	8	100.0

Above table 4.17 shows that in Delhi 60% never face any problem in the context of nutrition and food distribution in AWCs and 20% families having pressure as they need 3 times meal in AWCs and 20% are having shortage of ration from state and upper authority. In UP, 37.5% are never facing problems in the context of nutrition and food distribution in AWCs, and 25% are having shortage of ration from state and upper authority in AWCs and 37.5% children are demanding their favorite fruits and meal. In Jharkhand 25% never faced any problem in the context of nutrition and food distribution, 25% are facing family pressure as they need 3 times meal problem in AWCs and 12.5% are having shortage of ration from state and upper authority in AWCs and whereas 37.5% children were demanding their favorite fruits and meals and quality and quantity list low respectively.

State	Supply of food on time in AWC's	Frequency	Percentage
Delhi	Yes	5	100.0
	Total	5	100.0
UP	Yes	6	75.0
	No	2	25.0
	Total	8	100.0
Jharkhand	Yes	7	87.5
	No	1	12.5
	Total	8	100.0

Table 4.18 Supply of food on time in AWCs

The above table 4.18 shows that in Delhi there is 100% supply of food on time in AWCs. In UP there is 75% supply of food on time in AWCs and 25% are not having supply of food on time. In Jharkhand there is 87.5% supply of food on time in AWCs and 12.5% are not having supply of food on time.

State	If no what are the reasons	Frequency	Percentage
Delhi	No response	5	100.0
	Total	5	100.0
UP	No response	7	87.5
	Not proper accessibility	1	12.5
	Total	8	100.0
Jharkhand	No response	6	75.0
	Not proper accessibility	2	25.0
	Total	8	100.0

Table 4.19Reasons for the delayed supply of food

The above table 4.19 shows that in Delhi 100% are not having any reason if there is something. In UP 87.5% don't know what the reasons are and 12.5% have not proper accessibility. In Jharkhand 75% don't know what the reason is and 25% have not proper accessibility.

Table 4.20 Proper facilities available for serving the food for children

State	facilities available for serving	Frequency	Percentage
	the food for children		
Delhi	Utensils	5	100.0
	Total	5	100.0
UP	Utensils	1	12.5
	Place to eat	6	75.0
		1	12.5
	Total	8	100.0
Jharkhand	1.0	3	37.5
	3.0	3	37.5
	4.0	1	12.5
	99.0	1	12.5
	Total	8	100.0

The above table 4.20 shows that in Delhi 100% AWCs are providing the proper utensils for serving the food for children. In UP, 755 data shows places to eat in Anganwadi and Jharkhand 37.5 % utensils use & same 37.5 % place to eat in the centers

Table 4.21 Availability of storage facilities available for supplementary nutrition/
medicines

State	Storage facilities available for supplementary nutrition/ medicines	Frequency	Percentage
Delhi	Yes	4	80.0
	No	1	20.0
	Total	5	100.0

UP	Yes	5	62.5
	No	3	37.5
	Total	8	100.0
Jharkhand	No Response	2	25
	Yes	4	50.0
	No	2	25.0
	Total	8	100.0

The table 4.21 presents data on the availability of adequate storage facilities for food, supplementary nutrition, and medicine in Anganwadi Centres (AWCs) in three Indian states: Delhi, Uttar Pradesh, and Jharkhand. The data highlights significant differences in the responses from these states.

In Delhi, a substantial 80% of respondents indicated that such facilities are available in their AWCs, while the remaining 20% reported that they are not available. This suggests that AWCs have relatively high level of infrastructure and resources for storage in Delhi's AWCs. In Uttar Pradesh, the situation appears less favourable, with only 62.5% of respondents confirming the availability of adequate storage facilities. On the flip side, a significant 37.5% of respondents in the state reported that such facilities are not available. This indicates a noticeable disparity in the infrastructure across different AWCs in Uttar Pradesh.

Jharkhand shows a distinct pattern as well, with 50% of respondents confirming the availability of adequate storage facilities in their AWCs. However, it is noteworthy that 25% of respondents did not respond to the question, which could suggest either uncertainty or a lack of awareness about the situation. Additionally, the remaining 25% reported that such facilities are not available, indicating room for improvement in storage infrastructure in Jharkhand's AWCs.

In summary, the data from table above underscores variations in the availability of storage facilities for essential items in AWCs across Delhi, Uttar Pradesh, and Jharkhand. Delhi appears to have a higher proportion of AWCs with adequate storage, while Uttar Pradesh and Jharkhand face challenges with a significant percentage of AWCs lacking such facilities.

Understanding these disparities is essential for policy makers to prioritize resource allocation and improve the infrastructure in AWCs, ensuring better access to food, nutrition, and medicine for vulnerable populations in these states.

State	What steps have you taken to ensure proper storage facilities	Frequency	Percentage
	at AWC's		
Delhi	No Response	5	100.0
	Regularly check storage space	5	100.0
	Counseling to the Anganwadi	1	12.5
	worker		
	Total	8	100.0
UP	No response	3	37.5
	Regularly check storage space	3	37.5
	Check cleaning and hygiene	1	12.5
	storage space		
	Counselling to the Anganwadi	1	12.5
	works		
	Total	8	100.0
Jharkhand	Regularly cheque storage space	3	37.5
	Check cleaning and Hygiene	4	50.0
	storage space		
	No Response	1	12.5
	Total	8	100.0

Table 4.22 Ensuring proper storage facilities at AWCs

In the context of ensuring proper storage facilities in Anganwadi Centres (AWCs) in Delhi, Uttar Pradesh, and Jharkhand, it is evident that there are varying levels of responsiveness and actions taken by AWC workers.

In Delhi, the data reveals that a significant 60% of AWC workers have not responded adequately to the issue of storage facility maintenance. This could be a cause for concern as it indicates a lack of attention to the storage conditions. However, there is a positive aspect as well, with 20% of AWC workers regularly checking the storage facilities and another 20% engaging in counselling sessions with their AWC colleagues. These actions demonstrate a proactive approach to addressing storage-related challenges.

Turning our attention to Uttar Pradesh, we find a different distribution of responses. Here, only12.5% of AWC workers have not responded, suggesting a higher level of awareness. A noteworthy 37.5% regularly check the storage areas, which reflects a substantial commitment to maintaining storage hygiene. Equally important, another 37.5% focus on cleaning and ensuring the hygiene of the storage space. This balanced approach underscores a more organized effort to ensure proper storage conditions. The remaining

12.5% engage in counselling with AWC workers, showing an emphasis on collaboration and knowledge-sharing.

In Jharkhand, the situation is somewhat like Uttar Pradesh, with 12.5% of AWC workers not responding adequately to storage concerns. However, the majority, or 37.5%, actively and regularly check the storage space, indicating a strong commitment to upkeep. The differences in approach across these states may be attributed to local contexts, resources, and training programs available to AWC workers.

In summary, while there are common challenges related to storage facility maintenance across these three states, each region has adopted its own unique strategies to address them. It is imperative for stakeholders to share best practices and knowledge to ensure that AWCs in all states maintain proper storage facilities, thereby enhancing the overall quality of services provided to their beneficiaries.

State	Food being served at AWC meet the nutritional requirement	Frequency	Percentage
Delhi	Yes	3	60.0
	No	1	20.0
	Partially	1	20.0
	Total	5	100.0
UP	Yes	7	87.5
	No	1	12.5
	Total	8	100.0
Jharkhand	Yes	4	50.0
	No	3	37.5
	Partially	1	12.5
	Total	8	100.0

Table 4.23 Food being served at AWC meet the nutritional requirement

In the above table 4.23, data states that in Delhi there is 60% meet the nutritional needs of the food, which is served in the AWC, 20% meet partial needs of the nutrition of the food which is served in the AWC and 20% didn't meet the nutritional requirement from the food which served in the AWC. While in UP 87.5% met the nutritional meet of the food being served in the AWC and 12.5% population did not meet the nutritional meet of the food which was being served in the AWC. While in Jharkhand 50% met the nutritional needs of the food which is served in the AWC.

served in the AWC and 12.5% didn't meet the nutritional requirement from the food served in the AWC.

State	What measures you take to improve quality of food given	Frequency	Percentage
Delhi	Can't say anything	2	40.0
	Given nutritious diet to malnourished children	1	20.0
	Given seasonal fruits and vegetables	2	40.0
	Total	5	100.0
UP	Given balanced diet to malnourished children	1	12.5
	Update the requirement of food to the authority	1	12.5
	Given seasonal fruits and vegetables	1	12.5
	Properly check hygiene in pace of the food store and clean	3	37.5
	Can't say anything	2	25.0
	Total	8	100.0
Jharkhand	Given balanced diet to malnourished children	1	12.5
	Update the requirement of food to the authority	1	12.5
	Given seasonal fruits and vegetables	2	25.0
	Properly check hygiene in pace of the food store and clean	1	12.5
	Can't say anything	3	37.5
	Total	8	100.0

The above table 4.24 states that in Delhi, 40% have been given seasonal fruits and vegetables to improve the quality of food, 20% of malnourished children get a balanced diet and 40%

can't say anything about the measures which have been taken to improve the quality of food. While in UP 37.5% properly check hygiene at the pace of the food store, 12.5% get seasonal fruits and vegetables, 12.5% of malnourished children get a balanced diet, 12.5% Update the requirement of food to the authority and 25% can't say anything about the measure which has been taken to improve the quality of food. And in Jharkhand 12.5% properly check hygiene in the pace of food stores and clean, 12.5% of malnourished children get a balanced diet, 25% get seasonal fruits and vegetables, 12.5% properly check hygiene in the pace of food store and clean, 12.5% properly check hygiene in the pace of food store and clean, 12.5% can't say anything about the measure which have been taken to improve the quality of food.

State	How do you get to know about the	Frequency	Percentage
	nutritional status of		
	children		
Delhi	Through "Poshan	4	80.0
	Tracker Calculator"		
	Can't say anything	1	20.0
	Total	5	100.0
UP	Can't say anything	1	12.5
	Through record	3	37.5
	Through "Poshan	3	37.5
	Tracker Calculator"		
	By AWW	1	12.5
	Total	8	100.0
Jharkhand	Through record	5	62.5
	Through "Poshan	3	37.5
	Tracker Calculator"		
	Total	8	100.0

 Table 4.25 Information about the nutritional status of children

In the above table 4.25, data states that in Delhi 80% nutritional status of children was collected through the "Poshan Tracker Calculator", and 20% can't say anything about the nutritional status of the children. While in UP 37.5% of data has been collected through the "Poshan Tracker Calculator" about the nutritional status of children, 37.5% data was collected through existing records about the nutritional status of children, 12.5% data about the nutritional status of children collected through AWW and 12.5% can't say anything about the nutritional status of the children. In Jharkhand, 37.5% of data about the nutritional status

of children collected through "Poshan Tracker Calculator" and 62.5% data has been collected through the existing record about the child nutrition status respectively.

State	Steps undertaken to	Frequency	Percentage
	overcome the		
	malnutrition in		
	children		
Delhi	Separate diet plan	4	80.0
	Referral services	1	20.0
	Total	5	100.0
UP	Separate diet plan	7	87.5
	Referral services	1	12.5
	Total	8	100.0
Jharkhand	Separate diet plan	6	75.0
	Home visits and	2	25.0
	counseling to		
	parents/guardians		
	Total	8	100.0

Table 4.26 Steps undertaken to overcome the malnutrition in children

The above table 4.26 states that in Delhi 80% of the population has been given separate diet plans to overcome malnutrition in children and 20% of referral services have been taken to overcome malnutrition in children. While in UP 87.5% of the population has been given separate diet plans to overcome malnutrition in children and 12.5% of referral services have been taken to overcome malnutrition in children. In Jharkhand 75% of the population has been given home visits and counseling to parents/guardians to overcome malnutrition in children.

The table 4.26 illustrates the distribution of content covered in counseling sessions for parents regarding nutrition in three states: Delhi, Uttar Pradesh (UP), and Jharkhand. In Delhi, 80% of sessions emphasized promoting a healthy diet/nutritious plan, while 20% included advice on regular check-ups, totaling 5 sessions. Uttar Pradesh saw 12.5% of sessions not specifying any content, with the remaining 87.5% focusing on promoting a healthy diet/nutritious plan, totaling 8 sessions. Jharkhand had 62.5% of sessions emphasizing a healthy diet/nutritious plan, 12.5% each for promoting a balanced diet and special care, and another 12.5% focusing on regular check-ups, totaling 8 sessions. Overall, promoting a healthy diet/nutritious plan

was the primary focus across all states, but there were variations in the additional content covered in counseling sessions, such as regular check-ups, balanced diet promotion, and special care, reflecting regional differences in nutritional counseling priorities.

State	Malnourished children provided with separate diets	Frequency	Percentage
Delhi	Yes	2	40.0
	No	3	60.0
	Total	5	100.0
UP	Yes	8	100.0
	Total	8	100.0
Jharkhand	Yes	4	50.0
	No	4	50.0
	Total	8	100.0

Table 4.27 Separate diets to malnourished children

The data in the above table 4.27 states that in Delhi, 40% of children are provided with separate diet plans and 60% won't get any separate diet plans. While in UP 100% children are provided with a separate diet plan. In Jharkhand50% are provided with the separate diet plan and 50% didn't get any separate diet plan simultaneously.

Table 4.28Diet helpful in overcoming malnourished among children

State	Whether this diet is	Frequency	Percentage
	helpful in		
	overcoming		
	malnourished among		
	children		
Delhi	Yes	4	80.0
	No	1	20.0
	Total	5	100.0
UP	Yes	8	100.0
	Total	8	100.0
Jharkhand	Yes	2	25.0
	No	6	75.0
	Total	8	100.0

The data in the above table 4.28 states that in Delhi 80% benefited from the diet which has been given to overcome malnutrition among children and 20% did not get any benefit with the diet to overcome malnutrition among children. While in UP it is benefited for the 100% to

overcome from the malnutrition among children with the diet. In Jharkhand 25% benefited from the diet which is given to overcome malnutrition among children and 75% did not get any benefit with the diet to overcome malnutrition among children.

State	Provisions of ICD	5 Frequency	Percentage
	program t	0	
	overcome th	8	
	problem		
Delhi	Supplementary	3	60.0
	nutrition		
	Counseling c	f 2	40.0
	parents		
	Total	5	100.0
UP	Supplementary nutrition	8	100.0
	Total	8	100.0
Jharkhand	Supplementary	6	75.0
	nutrition		
	Counseling c	f 2	25.0
	parents		
	Total	8	100.0

Table 4.29 Provisions in ICDS program to overcome the problem

In the given table 4.29, the data represented in Delhi state is that 60% Supervisors reported that Supplementary Nutrition should be provided in ICDS program to overcome the problem and 40% reported that counseling of the parents should be provided to overcome the problem. In the U.P. state 100% Supervisors were sure about the Supplementary Nutrition to overcome the problem. In Jharkhand state it is seen that 75% Anganwadi workers gone with Supplementary Nutrition whereas 25% of Anganwadi workers reported that counseling of parents should be provided to overcome the problem.

Table 4.30Difference in Supplementary nutrition for malnourished children and normal children

State	Supplementary	Frequency	Percentage
	nutrition for		
	malnourished		
	children and normal		
	children		
Delhi	Need nutritious diet	4	80.0
	Extra protein and	1	20.0
	vitamin		
	Total	5	100.0

UP	Need nutritious diet	8	100.0
	Total	8	100.0
Jharkhand	Need nutritious diet	7	87.5
	Extra protein and	1	12.5
	vitamin		
	Total	8	100.0

In the above table 4.30 the data shows that in Delhi state 80% of supervisors reported that malnourished children need nutritious indigenous diet and balance diet and 20% Anganwadi workers reported that malnourished children need extra protein and vitamin. In U.P state 100% Anganwadi workers reported that malnourished children need nutritious indigenous diet and balance diet. In Jharkhand state 87.5% Anganwadi workers reported that malnourished children need nutritious indigenous diet and balance diet.

State	Ensuring the	Frequency	Percentage
	provision of	2	
	additional calories		
	proteins		
Delhi	Yes	3	60.0
	No	2	40.0
	Total	5	100.0
UP	Yes	7	87.5
	No	1	12.5
	Total	8	100.0
Jharkhand	Yes	6	75.0
	No	2	25
	Total	8	100.0

Table 4.31 Ensuring the provision of additional calories proteins

In the above table 4.31, it is shown that in Delhi 60% of AWWs ensured the provision of additional calories proteins and 40% were not sure about it. In the U.P. state, 87.5% of AWWs ensured the provision of additional proteins calories and 12.5% were not sure about it. In Jharkhand state, 75% of AWWs ensured the provision of additional calories proteins whereas 25% were not sure about it, respectively.

Table 4.32 Effective provision of services related to the malnourished children in ICDS

State	Effective provision of services related to	Frequency	Percentage
	the malnourished children in ICDS		

Delhi	Yes	5	100.0
	Total	5	100.0
UP	Yes	6	75.0
	No	2	25.0
	Total	8	100.0
Jharkhand	Yes	3	37.5
	No	5	62.5
	Total	8	100.0

In the above table 4.32 data shows, that in Delhi state 100% supervisors reported that facilities or services related to the malnourished children in ICDS program effectively provided. In the U.P. state, 75% of AWWs reported that facilities for malnourished children in ICDS program is effectively provided whereas 25% of AWWs denied it. In Jharkhand state 37.5% of AWWs accepted that facilities are effectively provided and 62.5% of AWWs denied it, respectively.

In Delhi state 100% of Supervisor's reported that nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program. In the U.P. state 100% of Anganwadi workers reported that the nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program. In Jharkhand state 25% of Anganwadi workers were not sure about that nutritional status of malnourished children is improved by taking necessary steps and measures under the ICDS Program and 50% of Anganwadi workers reported that nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program and 50% of Anganwadi workers reported that nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program and 25% of Anganwadi workers reported that nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program and 25% of Anganwadi workers reported that nutritional status of malnourished children improved by taking necessary steps and measures under the ICDS Program and 25% of Anganwadi workers reported that nutritional status of malnourished children has not improved by taking necessary steps and measures under the ICDS Program, respectively.

Major Findings and Discussion on Implementation practices and gaps from the AWW and Supervisor's perspectives

- 1. The results of the data analysis on the measures taken by AWW to address the issue of malnutrition in children separate diet plan is the step mostly taken in all the three different states. Although separate diet plans are prominent, a subset remains uncertain or claims no action, suggesting the need for comprehensive strategies.
- 2. The findings highlight disparities in food supply regularity and adequacy in AWCs across states. Delhi and UP's substantial percentages reporting regular supply reflect efforts in ensuring food security for registered children. In contrast, Jharkhand's

diverse responses suggest room for improvement in streamlining food supply systems for consistent child nutrition.

- 3. The findings depict regional disparities in the perceived quality of food provided to children in AWCs. While Delhi seems to be doing well in terms of the perceived quality, UP and Jharkhand exhibit a more mixed assessment, suggesting room for improvement in ensuring consistent high-quality food provision.
- 4. There is a need to create awareness regarding the importance of Village Health and Nutrition Day and activities which could be undertaken at AWCs. The findings reveal uncertainty in the timings of the last VHND held and requires some efforts to be undertaken in this regard. In UP and Jharkhand VHND day is organized regularly with some focused discussions taking place on diet of malnourished children, counselling of parents, immunization & vaccination camp but Delhi is lacking in this very regard to organization of VHND and the discussion on some important issues of health and nutrition.
- 5. The findings of the data analyzed depicts a notable awareness about the Mahila Mandal and the timings of the last Mahila Mandal held at AWCs. Mostly in Delhi Mahila Mandal is held once a month. Jharkhand majorly shows a mixed response of once in a month or after every 15 days but in UP it takes place mostly after every 15 days. This highlights the need for a comprehensive effort on planning a uniform timing for Mahila Mandal to be held regularly in the AWCs in all the states.
- 6. The results of the data analyzed reveal that in Delhi AWCs are clear about the timing of Supplementary nutrition/Mid-Day Meals (MDM) and morning snacks. The majority of AWC receive both the meals simultaneously in Delhi. In UP and Jharkhand, the responses are diverse and uncertain which is because no hot cooked meals and morning snacks are supplied to AWCs in UP and Jharkhand as found and discussed in chapter 3 also.
- 7. The findings related to satisfaction levels regarding the supply of raw food materials for children in Anganwadi Centers (AWCs) show that in Delhi and UP majority of AWCs are satisfied but also there are mixed responses of partial and complete dissatisfaction obtained in both the states. In Jharkhand the majority of AWCs are dissatisfied with the supply of raw food materials for children in Anganwadi Centres (AWCs). The policy makers and implementers need to focus on the supply of the raw food materials to the AWCs in terms of regularity, quality, and quantity.

- 8. The results show that in Delhi majority expressed high satisfaction with the quality of morning snacks and cooked meal provided in AWCs. But in the state of UP the majority is dissatisfied and in Jharkhand the majority of AWCs are satisfied but in both these states the subset remains uncertain or claims no action, suggesting the need for comprehensive strategies.
- 9. From the results of the data analysis on the AWWs satisfaction levels regarding the services offered at Anganwadi Centres (AWCs) across three Indian states it was found that UP faces a more significant challenge with majority of AWW unsatisfied whereas Jharkhand has a mixed response of satisfaction and unsatisfaction. In Delhi the majority of AWW expressed satisfaction and dissatisfaction with the services offered at AWCs.
- 10. A very strong planning is required on the training of AWW related to nutrition during early childhood which is missing, and very different training components exist in all the three states with no such evidence of any important component of training related to nutrition.
- 11. Findings reveal that the Supervisor's in all the three states are of the opinion that the nutritional status of malnourished children improves by taking necessary steps and measure steps measure to be taken under ICDS program.
- 12. The findings reveal that most of the supervisors are of the view that the supplementary nutrition will help in overcoming the problem of Malnutrition in Children which in a way is a very important finding. So, if proper emphasis is given to the provision of supplementary nutrition with reference to quality and quantity of Supplementary nutrition provided to malnourished children this will be a great measure to combat malnutrition in all the states. Next important provision in ICDS program which need to be strengthened is the frequent counseling of parents on nutrition, WASH, and health related issues.

III. Perspectives of CDPOs on Program Implementation and Existing Gaps

In the present study 6 CDPOs, 2 each from Delhi, Uttar Pradesh and Jharkhand were interviewed to explore about their perspectives on implementation, service delivery, barriers to service etc. their views are presented below:

a) Tracking of nutritional status: According to the CDPO the tracking nutritional status of children in different village/habitations among these states is largely through height

and weight measurement scale developed by UNICEF and keeping a record about it. A few CDPOs also reported that for tracking the nutritional status of the children home visits are conducted and mothers' awareness Program are conducted to make them aware about the diet plan for malnourished children.

- b) Malnutrition measures: For addressing malnutrition among children the strategies include providing ration, generating awareness among mothers through *Mahila Mandal* and VHND are the various means to provide support to children and families suffering from malnutrition. Moreover, very severe, and acute cases of malnutrition are referred to hospitals. All the CDPOs provide support to malnourished children in some way or the other the most common support was to provide extra ration, followed by admitting in the MTC, giving medicines like ORS and Iron tablets etc. Only Two CDPOs reported that a separate diet plan is prepared for malnourished children.
- c) Preventing malnutrition: To prevent malnutrition, steps taken include ensuring proper counselling for malnourished children and families, the AWW and supervisors are required to do the Home Visits and do regular follow up with the parents. Besides one CDPO also conducts regular meeting with the AWW and Supervisors on a weekly basis in the district block office. One CDPO also shared that training of AWW and Supervisors is organized to train the staff to do proper counselling on malnourished children and families.
- d) Status of supplementary nutrition: Almost all the CDPOs shared that there is no supply of morning snacks and hot cooked meal in their AWCs, with Delhi being an exception where hot cooked meals are provided. This is because there is a lack of supply of food items by the state government in the Anganwadi centres. Lack of funds is the reason given for not providing morning snacks and hot cooked meals. Take home ration (THR) has been a practice but again due to irregular supply of raw material, THR has not been provided for the last few months. There is a state wise difference regarding supplementary nutrition. In Delhi there is a provision of HOT cooked meals and morning snacks. And in UP & Jharkhand supplementary nutrition in the form of THR (raw food items).
- e) Ensuring quality of food: CDPOs had a variety of ways in ensuring the quality of supplementary nutrition. One of the foremost ways was through supervisors visiting AWC and checking the quality of the food given to the children. The food is checked for its quality through physical examination, checking the expiry date and sometimes

sending it to the laboratory. Other than this, regular meetings are conducted with AWW and the supervisors and it is suggested to provide fruits and green vegetables to children coming to AWC. Also, special nutritious food is provided to SAM/MAM children through AWC.

- f) Transportation, storage, and distribution of supplementary nutrition: The CDPOs reveals that it is ensured in the ICDS project through regular monitoring of the storage and transportation facility by the supervisory visits and ensuring that ration reaches in time and is stored properly the AWCs. Besides, one of the CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also carried our intermittent checks on the food quality and quantity provided in the AWC. Proper transportation, storage and distribution of supplementary nutrition are ensured in the ICDS project through regular monitoring of the storage and transportation facility by the supervisory visits and ensuring that ration reaches in time and is stored properly the AWCs. Besides, one of the CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also conducted monthly meetings with the supervisors to have the regular update. Another CDPO also carried our intermittent checks on the food quality and quantity provided in the AWC.
- g) Service Delivery: To ensure smooth delivery of supplementary nutrition to AWCs, the CDPOs regularly take an update from the AWW and the supervisors. As there are not many options for the delivery of the supplementary nutrition, the government supply of the rations is through AWCs and AWW are trusted for doing the job properly. SHGs are the supportive bodies in the delivery of supplementary nutrition. They are engaged in several ways in various states such as making home visits, involving them in awareness generation Program, be a part of the meeting in the block office and sharing their ideas and knowledge in improving the nutritional status of malnourished children.
- h) Outreach: VHND/ community outreach/Mahila Mandal contribute in certain ways to solve the issue of malnourished in children. A major role played is conducting awareness Program for the mothers on issues concerning WASH practices, child's diet, malnutrition among children and how pregnant and lactating mothers can benefit from the AWC.
- Lack of budget: Most of the CDPOs were concerned that there are insufficient funds for malnourished children. Whatever funds they get, it is not sufficient to provide any special diet for SAM and MAM children. It was revealed that Peshawar budget is

pending for 8 months so how could the nutrition be provided in AWC. This has been brought to notice by several AWW who informed that no food distribution has been done for nearly 4-6 months. At the same time, even the AWC does not provide any honorarium for 6 months. There is no continuous supply of ration due to lack of funds. One of the CDPOs reported that 'Only Rs.250/- provided per month for supplementary nutrition for malnourished children'. Given the level of malnutrition and the increasing cost of the food items, how does one justify Rs 250/- to be sufficient for malnourished children. All the CDPOs believed given the inflation rates, the cost of the supplementary nutrition needs to be revised as it is not sufficient for purchasing even the basic food items. Besides this, a budget should be added for more fruits and vegetables.

j) Recommendation for AWC: All the CDPOs believed WASH practices are a very significant component and need to strengthen. Several activities performed in various states at AWC are awareness Programs and monthly camps. Weekly meetings with AWW and supervisors are conducted to guide them and plan regular awareness activities regarding WASH.

CONCLUSION

From the findings of the study related to implementation practices and gaps in the ICDS program, following conclusion may be made:

- we can say that there is a need to focus on the inclusion of the specific diet plans for the identified malnourished Children in the AWCs for improving the nutritional status of the Children However, there is also a notable percentage of respondents who either cannot provide a clear answer or believe that no measures are taken, highlighting the need for continued efforts to address malnutrition comprehensively.
- The data related to the supply of regulatory and adequacy is crucial for policymakers and child welfare organizations, providing insights for targeted interventions to enhance food supply reliability in AWCs and promote registered children's well-being and combat malnutrition.
- The data related to the provision of quality food is invaluable for policymakers and organizations working toward improving child nutrition, providing them with insights into where efforts can be targeted to enhance the overall quality of food offered to children in AWCs.

- It may be concluded from the findings that there is uncertainty among the Anganwadi centres related to VHND and its activities mostly in the state of Delhi.
- Findings highlight the need for a comprehensive effort on planning a uniform timing for Mahila Mandal to be held regularly in the AWCs in all the states.
- There is a need to address the provision of HOT COOKED meals and Morning snacks in the state of UP And Jharkhand by the policy makers to overcome malnutrition in these states.
- The Anganwadi worker express dissatisfaction regarding the services provided to the Anganwadi centers, so there is need for understanding the areas where Anganwadi centers needs improvement in terms of infrastructural facility remunerations, food supply etc.
- The findings in all the three states also depict the need for strengthening Anganwadi workers in terms of training related to the Nutrition component, so we can say that while planning training for the Anganwadi workers a comprehensive framework on nutrition needs to be incorporated.
- There is a need for a comprehensive strategy to be undertaken for ensuring regular supply of raw material (THR) in the state of UP and Jharkhand.
- The finding shows that if proper strategies related to nutrition, WASH, health are designed and implemented, the problem of malnutrition will totally be eradicated through the ICDS program which has all these components as integral part of the program.
- From the findings it is revealed that supplementary nutrition of good quality and quantity and counselling of parents will be very helpful in solving the problem of malnutrition, particularly in the state of UP & Jharkhand.
- Most of the Anganwadi centres CDPO reported most of the Anganwadi centres have SHGs who are working actively in making home visits, they are also involved in awareness generation Program, be a part of the meeting in the block office and share their ideas and knowledge in improving the nutritional status of malnourished children, this seems to be a good practice in terms of effectively implementing the program of ICDS.
- There is a provision for seasonal fruits, vegetables, eggs, milk, nuts etc for the malnourished children in the ICDS program according to the CDPOs in all three

States. So, there is a need to monitor the provisions of these food items to the malnourished children since there has been not provided in the centres.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Content of the chapter

- Prevalence of malnutrition and associated factors among children aged 3-5 years attending ICDS Anganwadi in Delhi, Uttar Pradesh, Bihar, and Jharkhand
- Key Findings of the present study
- Recommendations
- Supplementary Nutrition Programme (SNP)
- Compulsory provision of snacks to the children in the age group of 3-5 years
- Special diets for malnourished children
- Financial Aspects
- Cost effective locally available food items in AWC
- Governance mechanisms
- Improving Monitoring and supervision of SNP

- Human Resources
- Infrastructure
- Infrastructure improvement and provision of basic facilities
- Training of ICDS functionaries
- Strong emphasis on WASH Practices
- Community participation for improving child health.

The Government of India introduced its flagship programme called Integrated child Development Services (ICDS) scheme on 2nd October 1975 and it represents one of the world's largest and unique programmes for early childhood care and development. ICDS is focussed towards children, lactating and expectant mothers where the focus is on dealing with prevalent issues of malnutrition, morbidity and mortality. The smallest unit of the ICDS programme is Anganwadi Centre (AWC). The Anganwadi Worker (AWW) is the frontline worker who is trained by the ICDS in the areas of health, nutrition and childcare and Anganwadis are one of the largest programme taking care of child nutrition, child health, supplementary nutrition and mother's health.

Right food should be provided to the children at the right age for the development of their fullest potential. Supplementary nutrition under ICDS scheme is primarily made to bridge the gap between the protein-energy deficit gap between the Recommended Dietary Allowed (RDA) and the Average Daily Intake (ADI) of children and pregnant and lactating mothers.

According to the Revised Nutritional and Feeding Norms of Supplementary Nutrition in ICDS Scheme, issued on 24th February 2009, by Ministry of Women and Child Development, GoI, there is an urgent need to adopt a comprehensive approach which includes promotion of optimal Infant and Young Child Feeding Practices (IYCF), dietary diversification, supplementation, micronutrient fortification of supplementary nutrition and public health measures such as promotion of personal hygiene, environmental sanitation, immunization etc. These revised guidelines were meant to supersede all previous guidelines on nutrition and feeding norms under the ICDS scheme.

The key features of the Revised Guidelines of MoWCD (2009) are to ensure the good nutritional status of the children in the age group from birth to 6 years, it is important to address different nutritional needs of the various age group withing this age bracket. To illustrate, early initiation and exclusive breastfeeding for children in the age group of 0 to 6

months, complimentary nutrition for children between the age group of 6 months to 3 years by providing them Take Home Ration (THR) from the AWC and finally providing supplementary nutrition to children in the age group of 3 to 6 years by providing them snacks and hot cooked meal at the AWC. For severely malnourished children, additional food should be given in the form of Micronutrient Fortified Food / Energy Dense Food as THR.

Keeping it in view the present study sponsored by National Human Rights Commission attempts to study the **Prevalence of malnutrition and associated factors among children aged 3-5 years attending ICDS Anganwadi in Delhi, Uttar Pradesh, Bihar and Jharkhand.**

According to NHFS-5(2019-21), the burden of malnutrition among children has not changed much even though various intervention programs are in operation in India. With such a flagship programme like ICDS and Nutritional Norms for Supplementary Nutrition (2009) in place, there is little information available regarding the factors responsible for malnutrition among the children. This study has been planned with the aim of assessing the prevalence of malnutrition and associated factors among children aged 3-5 years attending ICDS Anganwadis in northern region. The data was collected from mothers whose children in the age group of 3-5 years are attending AWC, AWW, Supervisors, CDPOs and Nutrition experts from every state. It is important to bring on record that ICDS Bihar did not give the permission to interview their ICDS functionaries, hence only the mothers of those children who were attending AWC were contacted through SHGs, Mahila Mandals, CBOs and Local NGOs.

The data collection completed in August 2023.

Key Findings of the present study

It is observed that majority of mothers in all states breastfeed their child, where UP leads the category with a percentage of 96.8%. Delhi stands at last with a percentage of 92.4% however percentage of feeding of colostrum.

Although the percentage of mothers feeding formula milk is less but it is due to low family income. If their family income had been high they would have easily given glorified formula milk. An appreciable number of mothers across the states report to introduce semi solid food to their infants at around 7-8 months. The WHO guidelines say that it should be done at 6

months as the child's requirements aren't met only by breastfeeding at that time. Hence if the semi solids are introduced later then definitely it will contribute to malnutrition.

It is important to emphasize on balanced diet as mothers in Delhi and UP are found to give Roti/ flat bread and vegetables while in Bihar and Jharkhand focus is exclusively on rice. So balance of nutrients is disturbed. Nearly all the mothers agreed that the child likes junk food like bread, ice cream, soft drinks, chips, biscuits and toffees. Inclusion of packaged food with preservatives isn't suitable at an early age.

A majority of mothers' highlights that the habit of watching TV/ mobile while eating causes the dependency of child on TV/mobile, where Delhi leads the category. A sizeable number of mothers believe this habit has decreased their food consumption. That's why watching mobile shouldn't be allowed to children.

It is important that meal habits as adults i.e. the practice of having breakfast, lunch and dinner along with snacks/ small eats should be formed in the preschool age. A lot of mothers spoke that the child does not eat in this fashion. Hence the child becomes deficient in nutrients.

A lot of mothers think that "good quality food" means expansive food like ghee and dry fruits only which can be brought by increased family income so there is a crucial need to educate them about importance of seasonal fruits and vegetables, low cost food like jaggery, black chana, millets and daliya. A lot of mothers especially in UP, Bihar and Jharkhand reveals that their lower age at the time child birth also affected the child's nutrition because they couldn't give nutritious food because of lack of knowledge, couldn't manage nutrition pattern especially in the first born child and also couldn't give variety of food to the child.

A small number of mothers admitted that due to less spacing they could pay less attention to their children's nutrition. Hence this could be included in the adolescent and mothers counselling. Gender discriminatory nutrition practices though are found less in Delhi, UP and Bihar but are more in Jharkhand which argues for gender sensitive nutrition practices.

Proper WASH practices like precautions for handling drinking water (no precaution was found in 96.4% cases in Jharkhand), hand hygiene before and after meals and after using toilet (half of the respondents aren't doing it), washing raw vegetables and covering of cooked food is also found less. This can be included in mahila mandal discussion.
From the findings of the data analysed it may be concluded that WASH practices are very important both at home and at AWC for children. The role of access to WASH facilities on child nutrition outcome is also shown to be significant.

Non parametric test computed on the different variables to find the relationship between rate of falling ill and health with the WASH practices showed a negative correlation between rate of falling ill and WASH practices at home. Combined access to improved water, sanitation, hygiene, handwashing was associated with reduced child illness and reduced child growth failure. Child's immunization record and nutritional status are negatively correlated with the child illness and health hence it may be concluded that regular updates on immunization, health and nutritional status of children prerequisite for effective programme implementation.

AWCs lack separate kitchen facility, storage facility, electricity supply, proper water facility, toilet facility, wash basinswhich calls the attention of policymakers and researchers to better understand the housing infrastructure in these states and formulate targeted interventions or improvements where necessary.

There is a need to strengthen the knowledge and understanding of AWWs in all the three states to combat the problem of malnutrition in terms of the important measures to be taken if a child is found to be malnourished. It is important to provide AWWs knowledge about the ICDS growth charts, norms for calories, Proteins, micronutrient for malnourished children, knowledge about the indications of drugs in the drug kit etc. Training needs of the AWWs have to be given significant place in programme planning ang implementation.

It may also be concluded that proper measures must be taken in terms of delivery and reach of supplementary nutrition to all children specially malnourished children. Hot cooked meals with quality assurance must be the important part of ICDS programme to combat the problem of malnutrition. Moreover separate diets for malnourished children needs proper planning and implementation.

From the findings of the study related to implementation practices and gaps in the ICDS program, following conclusion have been made:

The Study reveals that there is a need to focus on the inclusion of the specific diet plans for the identified malnourished Children in the AWCs for improving the nutritional status of the Children However, there is also a notable percentage of respondents who either cannot provide a clear answer or believe that no measures are taken, highlighting the need for continued efforts to address malnutrition comprehensively.

The data related to the supply of regulatory and adequacy is crucial for policymakers and child welfare organizations, providing insights for targeted interventions to enhance food supply reliability in AWCs and promote registered children's well-being and combat malnutrition.

The data related to the provision of quality food is invaluable for policymakers and organizations working toward improving child nutrition, providing them with insights into where efforts can be targeted to enhance the overall quality of food offered to children in AWCs.

It may be concluded from the findings that there is uncertainty among the Anganwadi centres related to VHND and its activities were mostly visible in the state of Delhi.

Findings highlight the need for a comprehensive effort on planning a uniform timing for Mahila Mandal to be held regularly in the AWCs in all the states.

There is a need to address the provision of HOT COOKED meals and Morning snacks in the state of UP, Bihar and Jharkhand by the policy makers to overcome malnutrition in these states.

The Anganwadi worker express dissatisfaction regarding the services provided to the Anganwadi centers, so there is need for understanding the areas where Anganwadi centers needs improvement in terms of infrastructural facility, remunerations, food supply etc.

The findings in all the three states also depict the need for strengthening Anganwadi workers in terms of training related to the Nutrition component, so we can say that while planning training for the Anganwadi workers a comprehensive framework on nutrition needs to be incorporated.

There is need of comprehensive strategy to be under taken for ensuring regular supply of raw material (THR) in the state of UP, Bihar and Jharkhand.

The finding shows that if proper strategies related to nutrition, WASH, health are designed and implemented, the problem of malnutrition will totally be eradicated through the ICDS program which has all these components as integral part of the program. From the findings it is revealed that supplementary nutrition of good quality and quantity and counselling of parents will be very helpful solving the problem of malnutrition, particularly in the state of UP, Bihar & Jharkhand.

Most of the Anganwadi centres CDPO reported most of the Anganwadi centres have SHGs who are working actively in making home visits, they are also involved in awareness generation programme, be a part of the meeting in the block office and share their ideas and knowledge in improving the nutritional status of malnourished children, this seems to be a good practices in terms of effectively implementing the program of ICDS.

There is a provision for seasonal fruits, vegetables, eggs, milk, nuts etc for the malnourished children in the ICDS program according to the CDPOs in all three States. So there is a need to monitor the provisions of these food items to the malnourished children since there has been not provided in the centres.

RECOMMENDATIONS OF THE STUDY– FOR THE POLICY MAKERS AND THE PROGRAMME IMPLEMENTORS

1. SUPPLEMENTARY NUTRITION PROGRAMME (SNP)

- ✓ Hot Cooked Meal (HCM) should be served to children –The concept of nutrition is distinct from hunger. It was found that the in the states covered under the present study, HCM was not provided in 3 states. Only Delhi provided hot cooked meal to children. It was widely perceived that HCM served to children (3- 5 years) at AWCs lacks dietary diversity and quality, so it was not liked by children. By improving the budgetary allocations, a Balanced HCM should be served to all the children as children who are coming to AWC are from marginalised communities and eating HCM in the AWC at last assures them nutritional diet.
- ✓ Take Home Rations/ Dry Rationin the form of Micronutrient fortified food to be given- The 3 states were providing dry or raw rations (wheat and Rice) to the child every fortnight and that too was not available for last 4 to 6 months in 2 states. The dry ration is often consumed by the whole family and not only by the child alone.

The Take Home ration (THR) should be given in the form that is palatable to the child and is seen as a food exclusively consumed by the child instead of the whole family. It is recommended that the THR should be given in the form of Micronutrient Fortified food and Energy-dense food that may be marked as `ICDS Food Supplement'.

- ✓ Compulsory provision of snacks to the children in the age group of 3-5 years Since the child in this age group is not capable of consuming a full meal (500 calories) in one sitting. It is recommended that the states should provide a morning snack in the form of milk/banana/ egg/ seasonal fruits /chana-murmura/ chana-jaggary and so on. This will help in providing variety and other nutrients to the children.
- ✓ Special diets for malnourished children -- different diet plan for mild, moderate and severe category children because they need more nutritious food to fight with malnourishment. Although AWC make the plan but because of scarcity of resources, special diets are not provided. It is recommended that adequate central funds should be provide to every state and under close monitoring and supervision, special diets must be provided to Malnourished children.

2. FINANCIAL ASPECTS

- ✓ Streamlining the regular funding of ICDS programme both from centre as well as state – Since the Supplementary Nutrition Programme (SNP) of ICDS is funded equally (50:50) through the Centre and the State funds, it is observed that there is lack of regular flow of funds from the Centre to States. Due to this the supplementary nutrition is not delivered timely to the AWCs and children donot get any nutrition from the AWC for months altogether. The findings show that in states under the study, many AWCs did not receive ration for more than 4 -6 months so they were not able to give anything to the children coming to AWC. The funds from the Centre are getting delayed due to administrative reasons. Hence it is recommended that there is need to smoothen the flow of funds from Centre to State so that the SNP does not suffer at all. At the same time salaries of the ICDS functionaries should be disbursed regularly otherwise it becomes very demotivating for the staff too to not get salary for 4-6 months.
- ✓ Increase the budgetof SNP to allow for dietary diversity, increase the conversion cost when the cooked meal is provided to the children and maintenance of

infrastructure. This will help in breaking the monotony and providing variety of food items which are liked by children.

✓ Cost effective locally available food items to be included in the diet plan of AWCand funds to be provided for it – Nutrition experts suggest that different types of food items are important for the balanced growth of a child. Most of the expert suggest Milk, Egg, Pulses, Green Vegetable, Fish, Fruits, Dalia etc. but in some states like Bihar and Jharkhand they said *Mota Anaj* (millets), parboiled rice, black gram, jaggery and seasonal fruits are nutritious as well as culturally acceptable and considered to be more beneficial. It is recommended that local knowledge about the food items should be included in the diet plan of the AWCand funds should be provided accordingly.

3. GOVERNANCE MECHANISMS

- ✓ Establish a Social Audit mechanism in ICDS Social Audit is generally conducted by the beneficiaries and stakeholders and is used a monitoring mechanism. It is widely perceived that the SNP component of ICDS lacks quality and there are many leakages and pilferages. With persistent reports of malnutrition and undernutrition, it is recommended that ICDS should establish a Social Audit mechanism.
- ✓ Improving Monitoring and supervision of SNP As per the guidelines of MoWCD issued on 22nd Oct 2010, there has to be periodic visits by the officials at various levels to review the programme implementation.
- ✓ Incessant supervision of malnourished children—Continuous supervision is needed in case of SAM and MAM children. They need to be followed especially for their nutrition, immunization, parental counselling and referral to the nearest hospital for immediate intervention. The AWW and the Supervisor have to maintain the records of these children and follow up such cases till there nutritional status improves.

4. HUMAN RESOURCES

✓ Filling vacant ICDS Vacancies for better implementation of the program– Nearly one third of the vacancies of Supervisors and CDPOs are vacant. The SNP program implementation becomes challenging without sufficient number of Supervisors and CDPOs. The study shows that there is extreme shortage of staff especially supervisors and CDPO. So it is practically not possible for them to monitor and supervise the program. It is recommended that the desirable number of supervisors and CDPOs are provided so that proper implementation of the SNP is ensured.

5. INFRASTRUCTURE

- ✓ Maintaining and updating ICDS website in the present study the ICDS websites were either poorly maintained or not maintained at all. Hence there was very limited access to information regarding the AWCs, ICDS offices and Officials and staff. It is recommended that all the states should compulsorily host an updated ICDS website with details about the ICDS services and the ICDS functionaries.
- ✓ Infrastructure improvement and provision of basic facilities— All the AWCs should have the electricity connection, drinking water supply, toilet, play area (Angan) kitchen and store room for ration.
- ✓ Co-location of AWC with primary school Location of the AWC should be reviewed and co-location with primary schools should be encouraged for greater integration with the schools. This will be in line with NEP 2020 which also recommends the same as it is going to be helpful in building foundational Literacy and Numeracy.

6. TRAINING OF ICDS FUNCTIONARIES

- ✓ Capacity Building of AWWs Study reveals that the AWW in all the states is over burdened, underpaid and irregularly paid. They are under-skilled and not updated about the latest information regarding Early childhood care and nutrition. It is recommended that regular trainings and capacity building programmes should be conducted for AWWs and they should be imparted skill-based knowledge. This can be followed up by regular hand holding sessions by Supervisors. This will have a positive impact on the implementation of SNP at the grass root level.
- ✓ Strong emphasis on WASH Practices -- All the stakeholders were of the opinion that WASH practices are a very significant component and need to strengthened. A number of activities need to be performed in various states at AWC generating awareness about WASH. It is recommended that Supervisors should train the AWWs on techniques of conducting WASH sessions, guide them and plan regular awareness activities regarding WASH.

7. COMMUNITY PARTICIPATION FOR IMPROVING CHILD HEALTH

- ✓ Engagement with the community where AWCs is located it is important to plan community level engagements to promote ICDS services and receive feedback for scheme improvements.
- ✓ AWC to Conduct Regular awareness programme for the mothers and children on balanced and nutritious diet – AWWs should be trained in engaging Mahila Mandals and Self-Help Groups to regularly conduct awareness programmes for mothers on the importance of Breastfeeding, complimentary feeding, nutritious diet and WASH practices.
- ✓ To work on the cultural beliefs of the communities Every community has certain cultural beliefs regarding colostrum, breastfeeding, complimentary nutrition, supplementary nutrition.
- ✓ To train AWW and Supervisors in the Social Behaviour Change Communication techniques (SBCC) so as to work with the community to include their best practices and help them to change their nutritional practices which are harmful for children's growth and development.
- ✓ Involvement of grandmothers in the nutrition process –In Indian rural families, it is generally the senior lady in the house who would take decisions regarding the diet of the family members. It is observed that grandmothers have an important role in influencing nutritional practices. It is recommended that grandmothers should be involved by AWWs in deciding about the food related decisions of children.

RECOMMENDATIONS FOR DESIGNING NUTRITIONAL INTERVENTION FOR CHILDREN ATTENDING ANGANWADI CENTRES

On the basis of the findings, the present research has recommendations to be incorporated in designing the nutritional intervention for children attending the AWC. These recommendations are based on the basis of information provided by the mothers of the Children Attending AWCs, Supervisors, CDPOs and the Nutrition Experts. Hence these are the proposed with evidence from the grassroot level and may be considered as non-negotiables. The research team has proposed the interventions in various domains:

1. SUPPLEMENTARY NUTRITION PROGRAMME (SNP)

✓ Hot Cooked Meal (HCM) should be served to children – Balanced HCM should be served to all the children as children who are coming to AWC are from marginalised communities and eating HCM in the AWC at last assures them nutritional diet.

2. SMOOTH FLOW OF FUNDS

✓ Streamline the flow of funds from Centre to State so that the SNP does not suffer at all. At the same time salaries of the ICDS functionaries should be disbursed regularly otherwise it becomes very demotivating for the staff also to not get salary for 4-6 months.

3. GOVERNANCE MECHANISMS

✓ Incessant supervision of malnourished children—Continuous supervision is needed in case of SAM and MAM children. They need to be followed especially for their nutrition, immunization, parental counselling and referral to the nearest hospital for immediate intervention.

4. INFRASTUCTURE

✓ Co-location of AWC with primary school – Location of the AWC should be with primary schools for greater integration with the schools. NEP 2020 also recommends the same as it is going to be helpful in building foundational Literacy and Numeracy among children.

5. TRAINING OF ICDS FUNCTIONARIES

✓ Strong emphasis on WASH Practices -- Supervisors should train the AWWs on techniques of conducting WASH sessions, guide them and plan regular awareness activities regarding WASH with the mothers and the community at large.

6. COMMUNITY PARTICIPATION FOR IMPROVING CHILD HEALTH

✓ To work on the cultural beliefs of the communities – Every community has certain cultural beliefs regarding colostrums, breastfeeding, complimentary nutrition, supplementary nutrition and WASH practices. In this case besides mothers, participation of Grandmothers is going to be very beneficial.

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