Summer Internship Report

at

IQVIA

(April 22nd to June 21st, 2024)

Impact of IYCF on intergenerational cycle of Malnutrition

A Report

By

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PG/23/117

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2023-2025

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ACKNOWLEDGEMENT

I would like to express my sincere gratitude to IQVIA for providing me with the opportunity to complete my summer internship program. This experience has been invaluable in furthering my professional development and solidifying my interest in the Public Health Sector. The past two months have been incredibly intense and full of learnings.

Firstly, I would like to express my sincere appreciation to **Mr. Kapil Dev Singh** and **Ms. Manjari Sharma** for their guidance, support, and valuable insights throughout the internship. Their expertise and encouragement were instrumental in enhancing my understanding and skills in the field of **RMNCAH+N and hospital system strengthening.**

Special thanks to **Ms. Devika Nair** whose collaboration and willingness to share knowledge significantly contributed to my professional development. Her constructive feedback and encouragement helped me navigate through challenges and achieve my internship objectives effectively.

I am also indebted to **Dr Altaf Yousuf Mir**, Associate professor and my mentor at IIHMR Delhi for their mentorship and guidance. His continuous support and confidence in my abilities has been a great source of inspiration.

I am also immensely thankful to the entire team at IQVIA for welcoming me warmly and providing a conducive environment for learning and growth. The hands-on experience and practical knowledge I gained in these months were invaluable. I would also like to thank my fellow interns, with whom I had the pleasure of working. Their enthusiasm and dedication made the internship experience more enjoyable, and I am grateful for the knowledge exchange we shared.

Additionally, I'm grateful to IIHMR Delhi for facilitating this internship opportunity. The institute's commitment to providing its students with real world experiences has been instrumental in the past and continues to do so.

Finally, I want to thank my friends and family for their continuous support and inspiration along this journey. Their understanding and motivation have been essential in helping me stay focused and determined.

This internship has been a significant step in my professional journey, and I am thankful to everyone who contributed to making it a rewarding experience.

Thank you.

LIST OF ABBREVIATIONS

AG	Infant feeding area graphs
ANM	Auxiliary Nurse Midwife
ART	Antiretroviral therapy
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centres
AWW	Anganwadi Workers
BMI	Body Mass Index
BoF	Bottle feeding 0-23 months
BPNI	Breastfeeding Promotion Network of India
CBF	Continued Breastfeeding
EBF2D	Exclusively Breastfed for the First Two Days After Birth
EBF2D	Exclusive Breastfeeding Under Six Months
EFF	Egg and/or flesh food consumption 6-23 months
EIBF	Early Initiation Of Breastfeeding
EvBF	Ever Breastfed
GNT	Global Nutrition Target
ICDS	Integrated Child Development Scheme
IEC	Information, Education, and Communication
IMS	Infant Milk Substitutes
IPC	Interpersonal Communication
ISSSF	Introduction of solid, semisolid or soft foods 6-8 months
IYC	Infant and Young Child
IYCF	Infant and Young Child Feeding
LMIC	Low and middle income countries
MAA	Mothers' Absolute Affection
MAD	Minimum acceptable diet 6-23 months
MCP	Mother and Child Protection
MIDD	Minimum dietary diversity 6-23 months
MixMF	Mixed Milk Feeding Under Six Months
MMF	Minimum meal frequency 6-23 months
MMFF	Minimum milk feeding frequency for non-breastfed children 6-23 months
MPW	Multi-Purpose Workers
NCD	Non communicable Disease
NFHS	National Family Health Survey
RCH	Reproductive Child Health
SSB	Sugar-sweetened beverage
SwB	Sweet beverage consumption 6-23 months
UFC	Unhealthy food consumption 6-23 months
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
VHND	Village Health Sanitation and Nutrition Days
WHO	World Health Organization
ZVF	Zero vegetable or fruit consumption 6-23 months

OBSERVATIONAL LEARNINGS

INTRODUCTION

Over the course of two dynamic months, I had the privilege of completing my summer internship at IQVIA, The internship took place at IQVIA's offices located in Noida and New Delhi, necessitating travel between both locations. This allowed me to gain insights into how IQVIA operates across different locations and observe the company culture and dynamics in each office. Further, it developed my adaptability and time management skills while navigating travel between the offices.

Throughout the internship, I benefited from the guidance of experienced mentors at IQVIA. They provided valuable insights into the industry and my career path. Additionally, I had the opportunity to network with colleagues from various departments, broadening my professional network. This experience provided a unique and invaluable opportunity for learning and professional growth. Through hands-on projects and close collaboration with experienced professionals, I gained significant insights into healthcare analytics and data management, making this internship a pivotal step in my career development.

IQVIA: INTRODUCTION

IQVIA, a worldwide corporation based in Durham, North Carolina, was formerly known as Quintiles and IMS Health. Providing advanced technology driven solutions, consulting and clinical development to the life science industry, it is a prominent healthcare data and analytics company with a significant presence in India. It operates through multiple offices across the country, including Mumbai, Delhi, and Hyderabad. IQVIA collaborates closely with pharmaceutical manufacturers, healthcare providers, payers, and government agencies in India, aiming to provide actionable insights and innovative solutions that improve patient outcomes and enhance the overall efficiency of the healthcare system. With about 86,000 employees, IQVIA operates in over 100 countries.

IQVIA MISSION

IQVIA envisions a future in which inventive solutions to enhance human health are produced by combining the latest developments in data science with human imagination. This is our intention. where each problem is seen as a chance to significantly impact clients, patients, and people as a whole. Find a career that fulfils your purpose and make a positive impact on the world.

IQVIA VALUES

Creativity

Innovation

Teamwork

MODE OF DATA COLLECTION

The data collection process involved utilizing secondary research techniques like conducting desktop analysis, consulting public domain current reports, examining published articles and research papers, extracting data from reliable government websites, and gathering information from relevant platforms.

KEY LEARNINGS

During my internship at IQVIA Consulting, I had the opportunity to work on multiple projects –

1. National Micronutrient Survey in Tajikistan 2024.
2. Assessment of drug Supply Chain Management in Mizoram.
3. Revision of EDL, Mizoram.
4. Delivery System Intervention for Nutrition-Sensitive Social Protection in Bangladesh.
5. Scale up Family MUAC Program in two districts of Nepal.
6. Supply Chain Management Of Drugs With Respect To The Essential Drug List: Rajasthan, India.
7. District Health Systems Strengthening in India.

ROLE IN IQVIA

As an intern, I was entrusted with diverse responsibilities that allowed me to gain practical insights into the industry. These included -

1. Desktop research and assessment of documents available on government websites and other public domains.
2. Proposal and report writing.
3. Support in stakeholder consultations.
4. Data analysis and interpretation.
5. Writing specific background and understanding sections for RFPs.
6. Supported in writing guidance notes.

PROGRAMME WISE OBSERVATIONS

IQVIA India has a strong public health practice working and a track record of working across multiple domain areas including maternal and child health, child nutrition and protection, water, sanitation, waste management, youth development, skill development, livelihood and social inclusion, independent verification, assessment studies, mid-term assessment, baseline assessment, training and Capacity Building, PHC Delivery, health systems strengthening, monitoring and evaluation, community-based healthcare, social protection, infectious diseases, Adolescent Health etc.

IQVIA'S EXPERIENCE IN NUTRITION SPECIFIC PROGRAMMES

IQVIA is an organization with extensive experience and expertise in the field of nutrition. They specialize in conducting large-scale evaluations and assessments related to nutrition programs, as well as providing research and data analytics to support evidence-based decision making. IQVIA has conducted over 100 evaluations in public health and nutrition, including outcome, impact, and process evaluations, across Asia and Africa in collaboration with various partners and stakeholders.

IQVIA has a track record of working closely with government institutions, multilateral organizations like the World Bank, think tanks, and health commissions on nutrition-based programs. They actively collaborate with governments and development partners to implement comprehensive and integrated strategies for addressing malnutrition and improving overall health outcomes. In India, IQVIA's Nutrition & Gender Practice aligns its services with the Poshan Abhiyaan (National Nutrition Mission), demonstrating their commitment to national nutrition initiatives.

The key areas of focus for IQVIA in the field of nutrition include maternal and newborn health, nutrition for infants, young children, and adolescents, gender equality, fortification and supplementation to improve nutritional intake, cross-departmental convergence, and behavioural change. By addressing these key issues, the objectives of IQVIA are to help communities and people attain optimal health and reduce hunger.

IQVIA'S EXPERIENCE IN HUMAN CENTRIC PROGRAMS

IQVIA has extensive experience in applying Human-Centered Design (HCD) principles to understand public health perspectives and address barriers to accessing healthcare services. They work closely with governments and development partners to identify and address specific challenges faced by different demographics, such as HIV patients, TB patients, and people with disabilities. IQVIA focuses on improving nutrition, gender equality, and behavioural change, while also conducting evaluations, surveys, and capacity-building projects. IQVIA's work spans areas such as public health research, performance assessment, gender indicators, and capacity building in hygiene and healthcare accessibility.

CONCLUSIVE LEARNINGS

- Proposal writing
- Time management
- Maintaining work life balance
- Coordination among team members for timely achievement of outputs
- Handling work pressure
- Enhancement in communication skills
- Exposure to the corporate world
- Making new connections with our colleagues.
- Engaging with people from varied areas of experience and expertise
- Attending given deadlines

LIMITATIONS

This two-month internship puts the research project in question. Within a short timeframe, it was challenging to overview reliable and relevant secondary data sources, potentially restricting the scope of the research. Due to time constraints, the depth analysis was limited, preventing an exhaustive examination of the available secondary data.

SUGGESTIONS FOR IMPROVEMENT

To assist interns in adjusting to the company culture, comprehending organisational objectives, and becoming acquainted with important projects and resources, establish a thorough and organised orientation programme at the beginning of the internship.

To guarantee that interns comprehend their duties and responsibilities, provide them with thorough project outlines and objectives. Frequent check-ins can enhance project results and assist to match expectations.

Arrange training sessions and workshops aimed at enhancing both hard and soft abilities. Project management, data analysis, public health trends, and communication techniques are a few possible topics.

Provide interns with chances to engage with various IQVIA teams and departments. This will provide them a more comprehensive understanding of the organization's activities and assist them in identifying areas of interest for potential career pathways.

Put in place a strong system of feedback so that interns routinely receive helpful criticism on their work and performance.

PROJECT REPORT

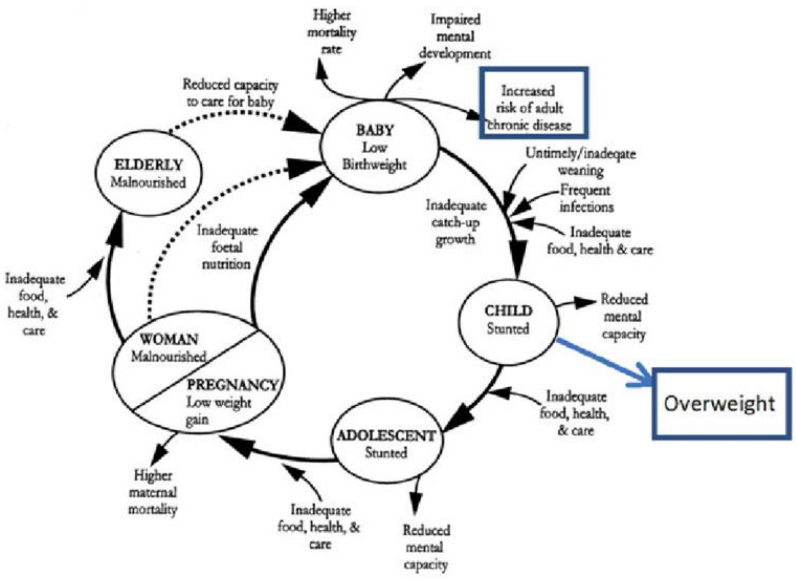
Enhanced Infant and Young Child Feeding (IYCF) practices and their impact on breaking the intergenerational cycle of malnutrition.

BACKGROUND

Today, the world is encumbered with a triple burden of malnutrition. This manifests as undernutrition (stunting and wasting), micronutrient deficiencies (termed as hidden hunger), and overnutrition (overweight and obesity). [1] In 2022, it was estimated that 149 million children under the age of five were stunted (too short for their age), 45 million were wasted (too thin for their height), and 37 million were overweight or obese. Undernutrition is responsible for over half of all children's deaths under the age of five. [2]

According to WHO and UNICEF, the first 1000 days of life are regarded as the critical window period. These include 270 days in utero and 2 years post-birth, and any form of malnutrition during this period can cause a faltering in brain development and the overall growth of a child. It can also lead to increased susceptibility to illnesses such as diarrhoea and pneumonia. Nutritional status of children below 2 years of age is directly affected by infant and young child feeding practices. IYCF practices, as defined by WHO, involve a set of well-known and common recommendations for adequate feeding of newborns and young children. It includes early initiation of breastfeeding, exclusive breastfeeding for initial 6 months, the introduction of complementary foods at 6 months and continued breastfeeding up to 2 years of age or beyond. [3]

Poor maternal nutrition is a major factor in child malnutrition, as children born to undernourished mothers have a higher chance of being born with a low birth rate. Further, girls born with a low birth have higher chances of becoming small adult women, who in future will give birth to low birth weight babies, perpetuating the cycle of malnourishment across generations.



Source : United Nations Subcommittee on Nutrition Fourth Report on the World Nutrition Situation, 2000 - modified

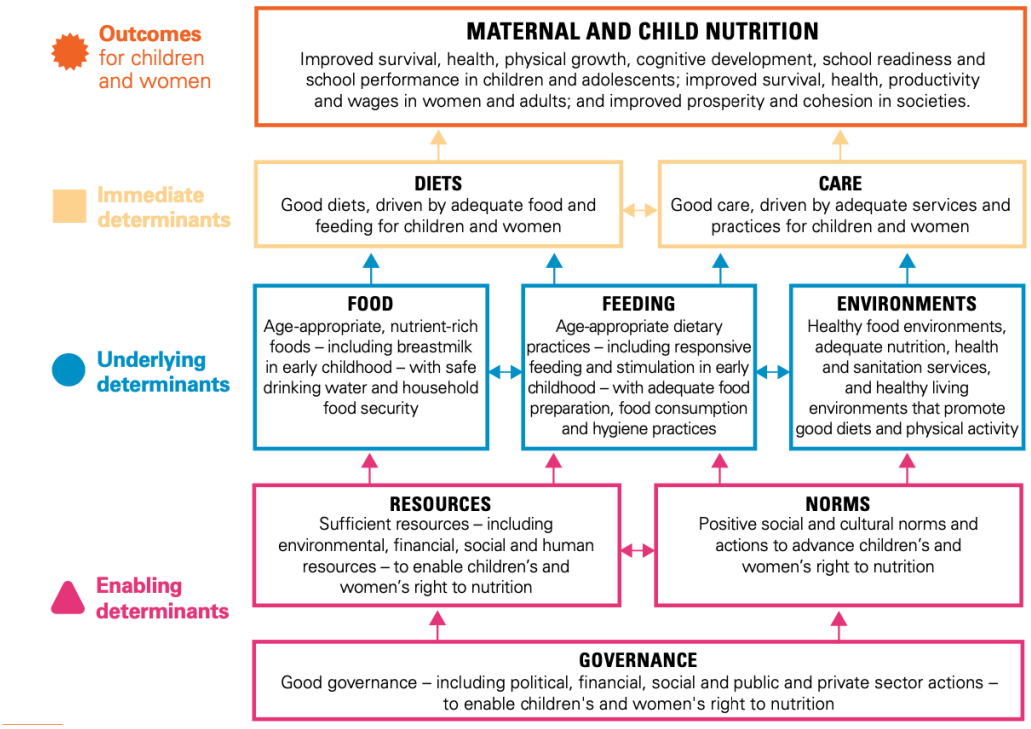
Enhanced IYCF practices have the potential to disrupt this intergenerational cycle. Well-nourished children are less susceptible to infections, have better cognitive function, and are more likely to become healthy adults who can provide adequate nutrition for their own children.

RATIONALE

To ensure a good start in life it is important that individuals receive optimal nutrition early in their life. Optimal nutrition not only increases survival, physical and mental growth, well-being and academic success in childhood, but it also promotes productivity and decent salaries in adulthood.

The first 1000 days from the time a child is conceived till the child's second birthday are imperative to ascertain that the child grows up to be a healthy and well-nourished adult, and in turn give birth to healthy children, aiding in breaking the intergenerational cycle of malnutrition.

According to the UNICEF's 2020 conceptual framework of nutrition, appropriate feeding and dietary practices along with a healthy food environment are underlying determinants of optimal mother and child nutrition. Improving maternal nutrition and educating new mothers on IYCF practices at the start of the life cycle of an individual improves nutritional status among children.



Source – UNICEF Conceptual framework of nutrition

AIM

To investigate how improved feeding practices for infants and young children can contribute to breaking the cycle of malnutrition that is often passed from one generation to the next.

OBJECTIVES

This review aims to analyse the existing literature on impact of feeding practices of newborns and young children on child malnutrition and how improving IYCF can help in breaking the generational trap of malnutrition.

Specific objectives of the research include -

- To assess the intergenerational cycle of malnutrition and it's deleterious effect on the life of individuals as well as a community.
- To thoroughly understand the IYCF practices and their role in child malnutrition.
- To review the current statistics of IYCF practices in India and to assess government initiatives aimed at improving these practices.

DATA AND METHODS

A systematic search for relevant literature including articles, documents, websites, grey literatures was conducted using PubMed, ScienceDirect, Lancet. Data was collected from reputable government websites and other pertinent platforms including WHO, UNICEF and USAID.

Boolean operators were used for search terms including "infant and young child feeding practices," "malnutrition," "intergenerational cycle," and "nutritional status." Priority was given to studies published in the last 10 years with a focus on articles investigating the impact of IYCF practices on breaking the intergenerational cycle of malnutrition in children.

This approach enabled a complete analysis and synthesis of pertinent data within the given context. Utilising the abundance of readily available information, the study ensured that analysis and interpretation had a solid foundation, allowing the production of well-informed insights and conclusions.

REVIEW OF LITERATURE

IMPACT OF EARLY NUTRITION ON LONG- TERM HEALTH AND ECONOMIC OUTCOMES

Good nutrition is the cornerstone of a healthy life, and this principle holds true especially during the early years. From the moment of conception, a child's body is in a constant state of growth and development. After the first 12 months, birth weight triples, and by the time the child is five years old, birth length doubles. Within 12 months, brain volume doubles, and within 36 months, it triples. [4] The nutrients they receive during this crucial period play a vital role in shaping their physical, cognitive, and emotional wellbeing for years to come.

The diet of young children not only influences their immediate health but also plays a pivotal role in their long-term well-being. Nutrition during the critical window period can significantly affect future economic outcomes and earning potential in adulthood. Research has shown that enhancing the nutritional intake of children during this vulnerable period increases their likelihood of completing education and securing employment in early adulthood. [4]

Conversely, poor nutrition at this stage can trap children in a vicious cycle of malnutrition. Malnutrition manifests in various forms, including stunting, wasting, hidden hunger, and overnutrition. Stunting and wasting are primarily caused by poor maternal nutrition, inadequate early childhood nutritional intake, infections, and diseases. These conditions prevent children from reaching their full potential in cognitive development and linear growth, adversely affecting their academic performance and life opportunities. Children suffering from wasting are particularly vulnerable to infections and have higher mortality rates due to compromised immune systems.

Micronutrient deficiencies, can have severe effects on a child’s survivance and growth. Overnutrition, characterized by the excessive intake of calories, results in overweight and obesity, which further exacerbate health issues. Overweight children are more likely to become obese adults and face behavioural and emotional challenges such as bullying, which may lead to mental health issues. [5]

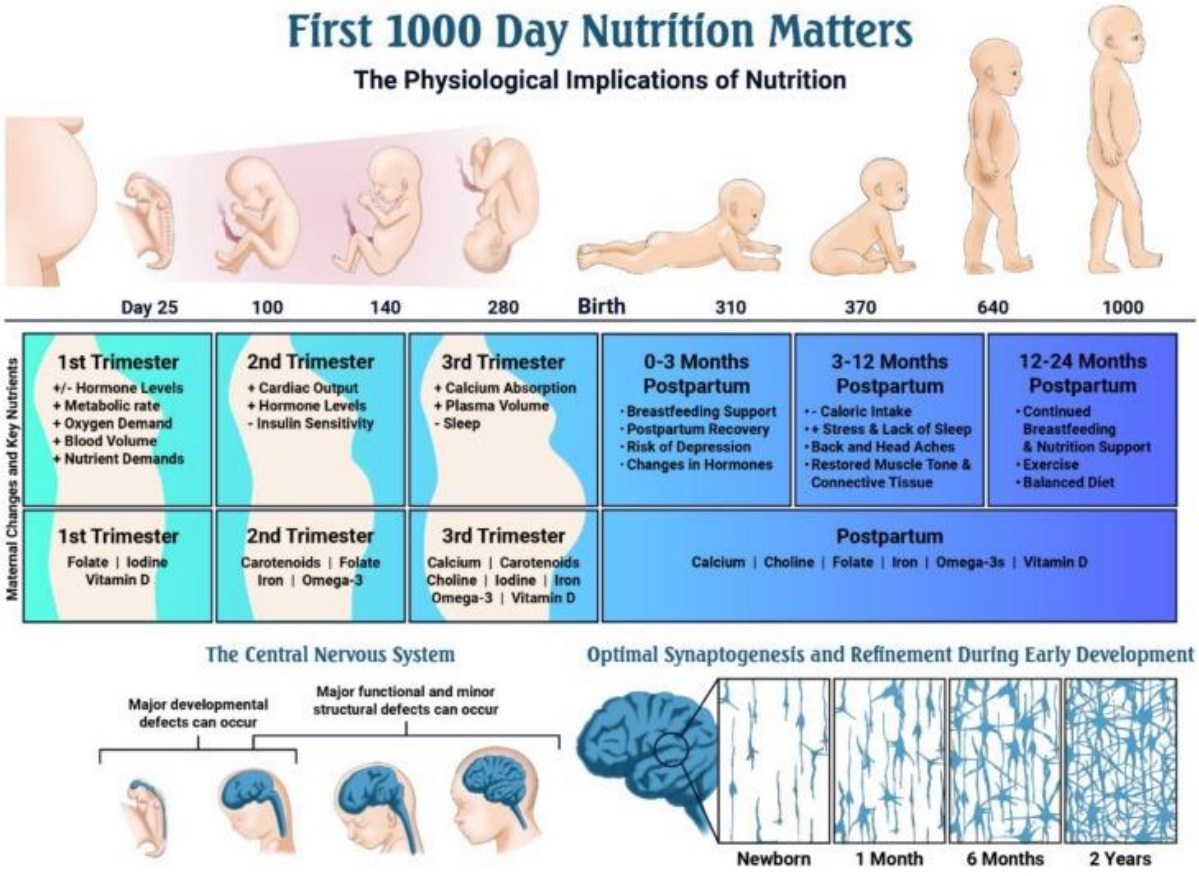
The repercussions of impaired nutritional status extend far beyond physical health, profoundly impacting the economic and social prospects of families. The intergenerational cycle of malnutrition keeps families entrenched in poverty, perpetuating a cycle of ill health and limited opportunities. Thus, addressing and improving nutrition in early childhood is essential for breaking this cycle and fostering healthier, more prosperous generations.

INTERGENERATIONAL CYCLE OF MALNUTRITION

A ripple effect across generations

A mother who is undernourished triggers the intergenerational cycle of malnutrition. During the initial two to eight weeks of pregnancy, the foetus undergoes fundamental growth, and the mother's nutritional status critically influences early embryonic development, organogenesis, and neurological development. It is imperative to ensure a good supply of nutrients, particularly during the last two trimesters, when foetal nutrient accumulation is vital for use after birth. [6]

Insufficient access to nourishing food or poor dietary choices deprives her body of the necessary building blocks for a healthy pregnancy. This deficiency directly affects the growing foetus, often resulting in low birth weight, which denotes a vulnerable start. These early setbacks can hinder their cognitive and physical development, placing them at a disadvantage later in life. Persistent malnutrition exacerbates these issues as the child grows, potentially leading to diminished learning capacity, stunted growth, and impaired cognitive development. This not only affects their academic performance but also their future employment prospects, making it harder to achieve financial stability.



Source - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6949907/

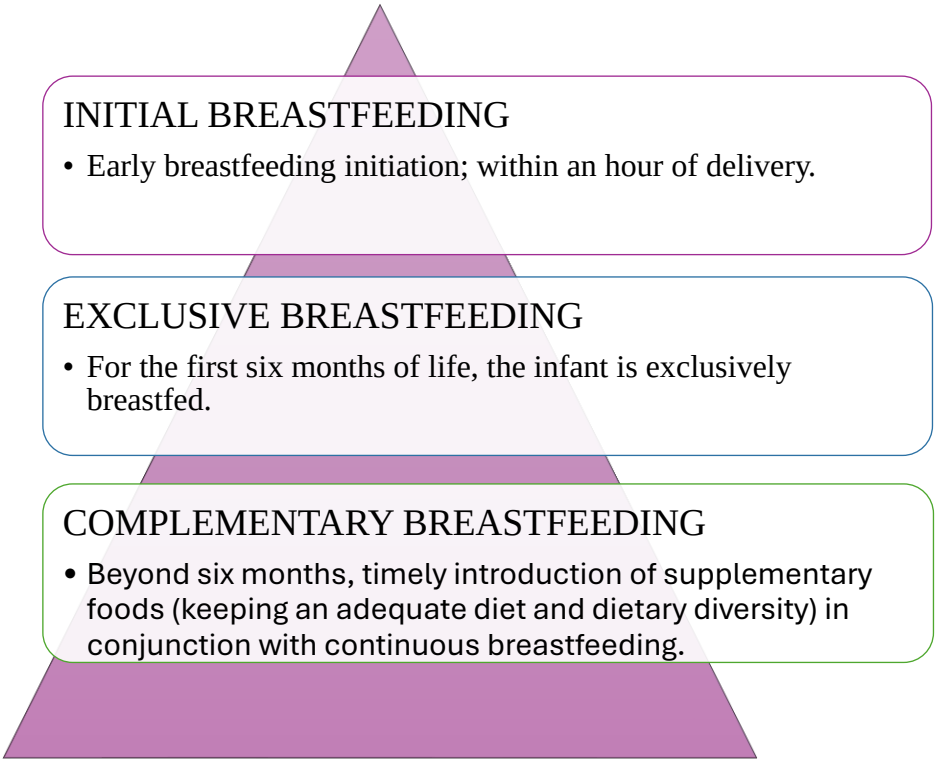
Malnourished children are more likely to become malnourished during adolescence, a crucial period for growth and development. Undernourishment at this stage significantly limits their physical and mental potential. Iron deficiency, a common consequence of malnutrition, can lead to anaemia, reducing energy levels and academic performance.

When these undernourished girls become pregnant, the cycle continues. Lacking the nutrients necessary for a healthy pregnancy, they, like their mothers before them, will deliver low birth weight babies, perpetuating a vicious cycle that traps future generations in a continuous struggle for basic health and well-being. [7] Research indicates that if stunting is not addressed within the first 1,000 days of life, it may become irreversible, resulting in an intergenerational cycle of malnutrition.

Nurturing Tomorrow: The Power of Optimal IYCF Practices

Focusing on the dietary needs of expectant mothers, newborns, and young children can significantly reduce the prevalence of malnutrition. Early investments in nutrition have profound benefits for society as a whole. Healthy children are more likely to grow into healthy adults, thereby strengthening the workforce and contributing to a more prosperous future.

IIYCF practices are authenticated guidelines that provide a roadmap for appropriate nutrition during the most critical developmental time of a child's life. Child survival rates are impacted by these behaviours because they directly affect the wellbeing and nutrition of children under two. Enhancing feeding practices for infants aged 0–23 months is crucial for promoting better nutrition, health, and overall development. By ensuring that each and every child receives all the essential nutrients they require during this vital period, we can lay the foundation for a healthier, more resilient population. [8]



FROM 0 – 6 MONTHS OF AGE : EXCLUSIVE BREASTFEEDING

CORNERSTONE OF INFANT HEALTH

Breastfeeding is universally acknowledged as the best way to nourish newborns, providing many benefits for the newborn and the nursing mother. Starting breastfeeding right after birth can lower the risk of infections and greatly decrease the death rate of newborns. Nursing exclusively for the first six months gives a newborn the necessary nutrients and fuel, supplying over half of their energy needs from 6 to 12 months, and up to a third at 12 to 24 months. Breast milk is still a nutritious option during sickness, aiding in reducing death rates in children who are malnourished.

Breastfed children have lower chances of becoming overweight or obese, tend to have higher IQ scores, and attend school more frequently. Breastfeeding is also associated with higher income levels in adulthood, benefiting both individual families and the broader economy by enhancing child development and reducing healthcare costs.

Encouragement for mothers and families is crucial to ensure optimal breastfeeding practices. Supportive health services are vital, offering infant and young child feeding counselling. By prioritizing and supporting breastfeeding, we can lay a strong foundation for the well-being of both children and mothers, fostering a healthier, more productive society. [8]

BREASTFEEDING INDICATORS

Breastfeeding indicators				
S.no	**Indicator**	**Short name**	**Age group**	**Definition**
1	Ever breastfed	EvBF	Children born in the last 24 months	Percentage of children born in the last 24 months who were ever breastfed
2	Early initiation of breastfeeding	EIBF	Children born in the last 24 months	Percentage of children born in the last 24 months who were put to the breast within one hour of birth
3	Exclusively breastfed for the first two days after birth	EBF2D	Children born in the last 24 months	Percentage of children born in the last 24 months who were fed exclusively with breast milk for the first two days after birth
4	Exclusive breastfeeding under six months	EBF	Infants 0-5 months of age	Percentage of infants 0-5 months of age who were fed exclusively with breast milk during the previous day
5	Mixed milk feeding under six months	MixMF	Infants 0-5 months of age	Percentage of infants 0-5 months of age who were fed formula and/or animal milk in addition to breast milk during the previous day
6	Continued breastfeeding 12-23 months	CBF	Children 12-23 months of age	Percentage of children 12-23 months of age who were fed breast milk during the previous day

Source - https://iris.who.int/bitstream/handle/10665/340706/9789240018389-eng.pdf?sequence=1.

6. EVER BREASTFED (EvBF)

Infants worldwide should be breastfed, with the rare exception of those who have certain medical issues. Although breastfeeding is very common in the majority of countries, this is not the case everywhere. This metric is beneficial for promoting breastfeeding and measuring the widespread approval of it, particularly in affluent countries.

6. EARLY INITIATION OF BREASTFEEDING (EIBF)

Breastfeeding should begin as soon as possible after birth, according to WHO guidelines on maternity care "All mothers should be supported to initiate breastfeeding as soon as possible after birth, within the first hour after delivery". Breastfeeding has several advantages, Skin-to-skin contact is necessary when placing babies to the breast, and this early, postpartum connection between mother and child has enormous benefits. Breastfeeding newborns for at least one hour after delivery is highly indicative of exclusive breastfeeding in the future. Infants who are not breastfed within the first hour of life are more likely to suffer from common illnesses or die.

6. EXCLUSIVELY BREASTFED FOR THE FIRST TWO DAYS AFTER BIRTH (EBF2D)

According to the WHO Global Strategy for IYC Feeding, babies should only be breastfed for the first six months of their lives. According to WHO guidelines on maternity care "Mothers should be discouraged from giving any food or fluids other than breast milk, unless medically indicated. Anything other than breast milk for babies could cause them to miss out on their mother's crucial first feeding and make it more challenging to initiate breastfeeding in the long run. Nonetheless, during the first few days following delivery, it is typical in many parts of the world to offer babies meals or liquids other than breast milk. Some maternity wards still use antiquated procedures wherein babies are kept apart from their mothers and fed liquids like formula or sugar water while the moms are resting.

6. EXCLUSIVE BREASTFEEDING UNDER SIX MONTHS (EBF)

It is advised by the WHO Global Strategy for IYC Feeding that babies be nursed exclusively for the first six months of their lives. All around the world, exclusive breastfeeding is the safest and healthiest option for children. It ensures that infants have access to a food source that is safe, clean, healthy, and specially tailored to meet their needs. Research indicates that before six months of age, infants in low- and middle-income countries who were fed a combination of meals and liquids in addition to breast milk had almost three times the risk of dying compared to those who were nursed exclusively. Acute otitis media, lower respiratory infections, diarrhoea, and childhood overweight and obesity are all prevented by exclusive breastfeeding.

6. MIXED MILK FEEDING UNDER SIX MONTHS (MixMF)

This indicator was added to capture the practice of giving infants younger than six months old formula and/or animal milk in addition to breast milk. This is a widespread practice in many nations, although it is not advised because breast milk is likely to be replaced by non-human milks.

Reduced breast milk supply, changed gut microbiota, and an increased risk of early breastfeeding cessation are linked to mixed milk feeding, which combines breast milk with a breast milk replacement.

6. CONTINUED BREASTFEEDING 12–23 MONTHS (CBF)

It is recommended by the WHO Global Strategy for IYC Feeding that children be breastfed for at least two years. After one year, breast milk can provide a significant amount of the energy that a breastfed child requires for their diet. While sick children frequently have little interest for solid food, nursing is essential during this time because it can help prevent dehydration and provide the nutrients needed for recovery. If nursing is continued, 50% of all infectious disease-related deaths in infants between the ages of six and 23 months may be avoided. Children and adolescents who are breastfed for longer than 12 months exhibit superior performance on IQ tests, which is reliably linked to continued nursing. Extended breastfeeding sessions may lower a child's chance of gaining weight or obesity. Mothers should continue nursing since it lowers their risk of breast cancer and may also lower their risk of type 2 diabetes and ovarian cancer. [9]

FROM 6 MONTHS TO 2 YEARS : COMPLEMENTARY FEEDING

At six months of age, an infant's need for energy and nutrients surpasses what breast milk alone can provide, making the introduction of complementary foods essential. This period also coincides with the developmental readiness of infants for additional foods. Failure to introduce complementary foods by six months or providing them incorrectly can result in stunted growth.

To ensure that infants receive the necessary nutrients for optimal growth and development during this critical stage of life, the following guidelines should be adhered to-

- **Continue Breastfeeding -** Maintain regular, on-demand breastfeeding until the child reaches the age of two.
- **Responsive Feeding -** Feeding children patiently, engage in conversation, make eye contact, and encourage them to eat without pressuring them.
- **Hygiene and Food Safety -** Maintain good hygiene practices and handle food with care to prevent contamination.
- **Portion Sizes -** Begin feeding infants modest portions at six months old and gradually increase the portions as they grow.
- **Consistency and Variety -** Gradually increase the consistency and variety of diet.
- **Feeding Frequency -** Increase the frequency of feedings gradually as the child grows.
- **Nutrient Supplements -** Use fortified foods as necessary to meet nutritional requirements.
- **Feeding During Illness -** When the child is sick, boost fluid intake, especially through increased breastfeeding, and provide soft foods to ensure continued nourishment. [8]

COMPLEMENTARY FEEDING INDICATORS

Complementary Feeding Indicators				
S.no	**Indicator**	**Short name**	**Age group**	**Definition**
1	Introduction of solid, semisolid or soft foods 6-8 months	ISSSF	Infants 6-8 months of age	Percentage of infants 6-8 months of age who consumed solid, semi-solid or soft foods during the previous day
2	Minimum dietary diversity 6-23 months	MIDD	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day
3	Minimum meal frequency 6-23 months	MMF	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more during the previous day
4	Minimum milk feeding frequency for non-breastfed children 6-23 months	MMFF	Children 6-23 months of age	Percentage of non-breastfed children 6-23 months of age who consumed at least two milk feeds during the previous day
5	Minimum acceptable diet 6-23 months	MAD	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed a minimum acceptable diet during the previous day
6	Egg and/or flesh food consumption 6-23 months	EFF	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed egg and/or flesh food during the previous day
7	Sweet beverage consumption 6-23 months	SwB	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed a sweet beverage during the previous day
8	Unhealthy food consumption 6-23 months	UFC	Children 6-23 months of age	Percentage of children 6-23 months of age who consumed selected sentinel unhealthy foods during the previous day
9	Zero vegetable or fruit consumption 6-23 months	ZVF	Children 6-23 months of age	Percentage of children 6-23 months of age who did not consume any vegetables or fruits during the previous day

Source - https://iris.who.int/bitstream/handle/10665/340706/9789240018389-eng.pdf?sequence=1.

1. INTRODUCTION OF SOLID, SEMI-SOLID OR SOFT FOODS 6–8 MONTHS (ISSSF)

At six months of age, it is recommended to start solid, less solid, and tender foods. Similarly, the recommendation to start feeding complementary foods at six months, following up with

breastfeeding, is a key principle in caring for a baby who is being breastfed. Babies could suffer from malnutrition if they don't start eating solid foods beyond their first six months, as their nutritional requirements are more than what breast milk can meet.

2. MINIMUM DIETARY DIVERSITY 6–23 MONTHS (MDD)

Based on the advice provided by the World Health Organization, it's recommended for children aged 6-23 months to consume a variety of foods to ensure they get all the necessary nutrients. Having different types of food can lead to healthier growth in young children. Eating a varied diet can reduce the chances of not getting enough of certain vitamins and minerals, which is important for their overall development, both physically and mentally. A research study found that not eating foods high in nutrients like eggs, dairy, fruits, and vegetables was associated with minimal intake, which could negatively affect their growth.

3. MINIMUM MEAL FREQUENCY 6–23 MONTHS (MMF)

The WHO recommendations for introducing solid foods to babies who have been breastfed specify that infants who are breastfeeding should start receiving complementary foods 2-3 times daily between the ages of 6-8 months and 4-5 times daily for those who are still breastfeeding between 9-23 months. It also advises adding extra healthy snacks to the diet of these children once or twice daily. These guidelines also suggest that children who are not breastfed should be given four to five meals each day. Not sticking to the recommended meal and snack frequencies could affect the overall intake of calories and essential nutrients by the body, potentially leading to deficiencies in vitamins and minerals, delays in growth, and problems with development.

4. MINIMUM MILK FEEDING FREQUENCY FOR NON-BREASTFED CHILDREN 6–23 MONTHS (MMFF)

Dairy products are excellent sources of calcium and various other essential nutrients. The World Health Organization (WHO) suggests that the quantity of milk required to fulfil nutritional needs varies based on the types of foods the child eats, especially for infants under 2 years of age who are not breastfed. For children whose diets lack fortified foods or dietary supplements, the WHO recommends a milk intake of about 200–400 mL daily, provided they consume animal-based foods. Conversely, without these animal-based foods, the intake should range between 300–500 mL daily. Milk is available in different serving sizes, but it should never exceed 240 mL (8 ounces) and should always be at least 100 mL (3.5 fluid ounces). This range would necessitate consuming at least two milk meals daily to achieve 200–500 mL of milk intake.

5. MINIMUM ACCEPTABLE DIET 6–23 MONTHS (MAD)

The World Health Organization's recommendations on nutrition for children who are breastfed or not breastfed state that kids between 6 and 23 months old need to eat at consistent times and have a diverse range of foods to get enough nutrients and energy. This advice also introduces the need for children not being breastfed to drink milk at least twice more than they had the day before.

6. EGG AND/OR FLESH FOOD CONSUMPTION 6–23 MONTHS (EFF)

According to WHO recommendations, "meat, poultry, fish, or eggs should be consumed on a daily basis, or at least several times a week" for children who are breastfed and those who are not.

Research shows that children who consume meat and eggs tend to absorb more essential nutrients required for proper growth. An increase in zinc and protein intake has been associated with adding meat to the diet of breastfed infants as a supplementary food early on. Moreover, studies have shown that the consumption of meat and eggs is uncommon in several countries.

7. SWEET BEVERAGE CONSUMPTION 6–23 MONTHS (SwB)

According to WHO guidelines for supplemental feeding, soft drinks and other sugary drinks should not be given to children because they only provide energy and may replace more nutrient-dense diets. Increased use of sugar-sweetened drinks (SSBs) is associated with being overweight kids of all ages. Six-year-old obesity is linked to the early introduction of sugar-sweetened beverages (SSBs, before 12 months of age). Many low- and middle-income nations also frequently consume commercially produced SSBs. Consuming sugar-sweetened beverages (SSBs) during the supplementary feeding is related to childhood obesity. Eating free sugars, such as those found in 100% juice and sugar-sweetened beverages, is linked to a higher risk of dental cavities. SSBs have more evidence of harm than 100% juice, and recommendations for juice consumption are typically more ambiguous and complex. Nonetheless, most survey participants are unable to discriminate between juice beverages that are 100% juice and juice drinks that have added sugar. Therefore, in this measure of sweet beverage consumption, SSBs and 100% juice are on par.

8. UNHEALTHY FOOD CONSUMPTION 6–23 MONTHS (UFC)

In numerous countries with lower to medium income levels, eating patterns are shifting to incorporate an increased amount of processed sugars, unhealthy fats, salt, and refined carbohydrates. Food products produced on a large scale often contain a high amount of salt, sugar, saturated and/or trans fatty acids, lack essential nutrients, and are high in calories. Avoiding items like chocolate, candy, chips, French fries, cakes, and cookies is advised by recent national guidelines for feeding infants with special needs. Such snacks have the potential to replace more nutrient-dense foods and reduce intake of vital vitamins and minerals. Consuming unhealthy snack foods and beverages has recently been linked to a lower length-for-age and an increased risk of nutrient deficiency in one-year-old children. If such behaviours persist into adolescence and adulthood, there is a greater chance of being overweight or obese in the future, as well as developing linked chronic illnesses.

9. ZERO VEGETABLE OR FRUIT CONSUMPTION 6–23 MONTHS (ZVF)

According to the World Health Organisation, consuming fewer fruits and vegetables is associated with NCDs. There is evidence that having a diet low in fruits and vegetables in early childhood is associated with a lower intake in later life, even though the majority of the data used in these statistics comes from adult intake. For every meal, the target age group should have one serving of vegetables, according to the American Academy of Paediatrics. Consuming no fruits or vegetables the day before is not a healthy habit, even though there is no consensus on the ideal amount of servings of fruits and vegetables for children older than six months. [9]

OTHER INDICATORS

Other Indicators				
S.no	**Indicator**	**Short name**	**Age group**	**Definition**
1	Bottle feeding 0-23 months	BoF	Children 0-23 months of age	Percentage of children 0-23 months of age who were fed from a bottle with a nipple during the previous day
2	Infant feeding area graphs	AG	Infants 0-5 months of age	Percentage of infants 0-5 months of age who were fed exclusively with breast milk, breast milk and water only, breast milk and non-milk liquids, breast milk and animal milk/formula, breast milk and complementary foods, and not breastfed during the previous day

Source - https://iris.who.int/bitstream/handle/10665/340706/9789240018389-eng.pdf?sequence=1.

1. BOTTLE FEEDING 0–23 MONTHS (BoF)

As feeding bottles are hard to clean and a major pathway for the spread of infections, feeding bottles should be avoided, according to WHO guiding principles. A bottle could get in the way of a baby's ideal nursing habits. The WHO advises against using feeding bottles and favours the use of cup feeding.

2. INFANT FEEDING AREA GRAPHS (AG)

The mentioned signs provide a somewhat restricted view of the differences in eating habits across the population at various stages of infancy, though they are beneficial for comparing groups, concentrating efforts, and monitoring changes over periods. Additionally, it is recommended to include visual depictions of the infant and young child feeding (IYCF) process. [9]

FEEDING IN EXCEPTIONALLY DIFFICULT CIRCUMSTANCES

Children and families in challenging situations need extra care and useful assistance. Mothers and infants should, if feasible, stay together and receive the assistance they require in order to use the best feeding choice available. For infants, breastfeeding is still the recommended method of feeding in practically all challenging circumstances such as –

- premature or low-birth-weight babies
- women living with HIV in areas where pneumonia, diarrhoea, and malnourishment are still common causes of death
- Adolescent moms
- undernourished newborns and early toddlers.
- families dealing with the fallout from complicated events are just a few of the groups affected.

HIV and infant feeding

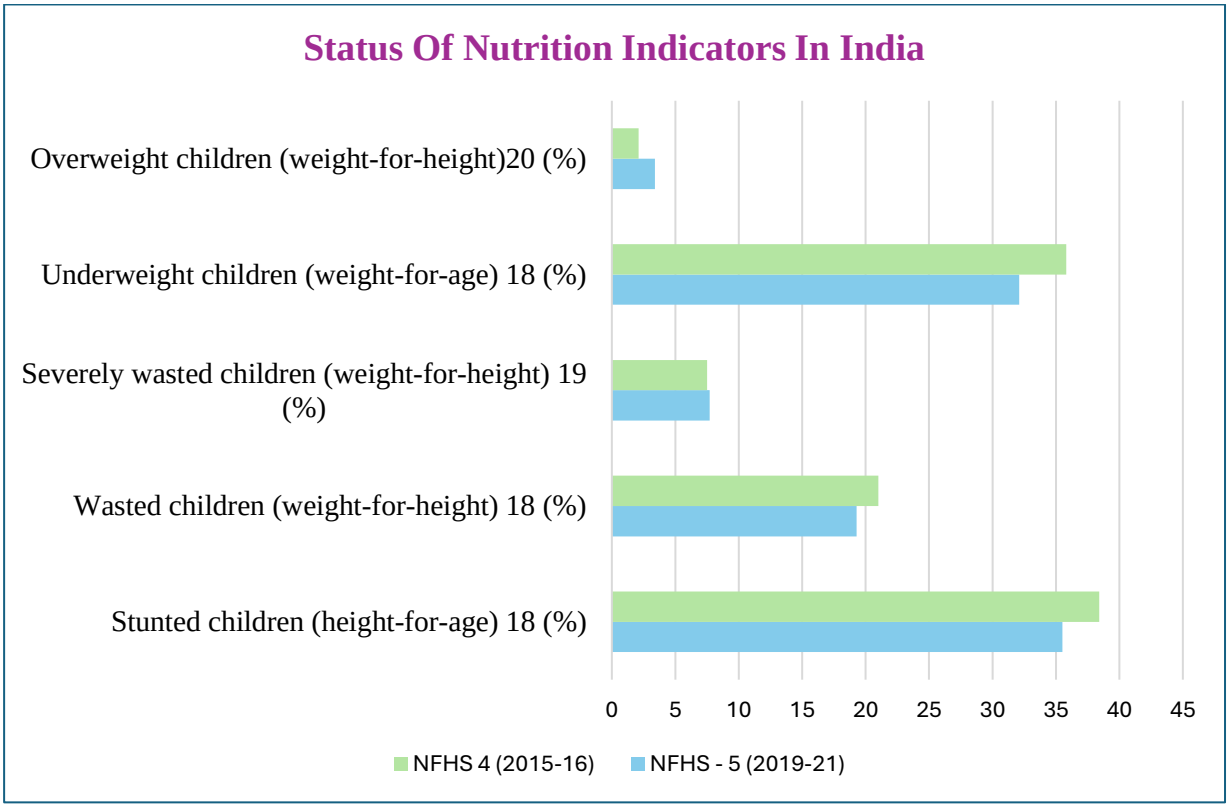
- The World Health Organisation advises all HIV-positive individuals, including expectant mothers and nursing moms, to start taking ART as soon as they find out they are infected.
- After six months, mothers should offer suitable complementary foods and continue breastfeeding until the kid turns one year old. Until then, mothers should exclusively nurse their baby. This is particularly crucial in regions where breastfeeding is advised by national health authorities and where pneumonia, diarrhoea, and malnutrition are significant causes of morbidity and death.

IYCF IN INDIAN CONTEXT

In a lot of LMICs, inappropriate IYCF practices remain prevalent even after the recognized perks of adequate IYCF practices. These suboptimal practices have contributed significantly to child malnutrition, accounting for approximately 68% of under-five mortality and 83% of newborn deaths in India. In 2016, inappropriate IYCF practices was the underlying cause of 0.9 million under-five deaths.

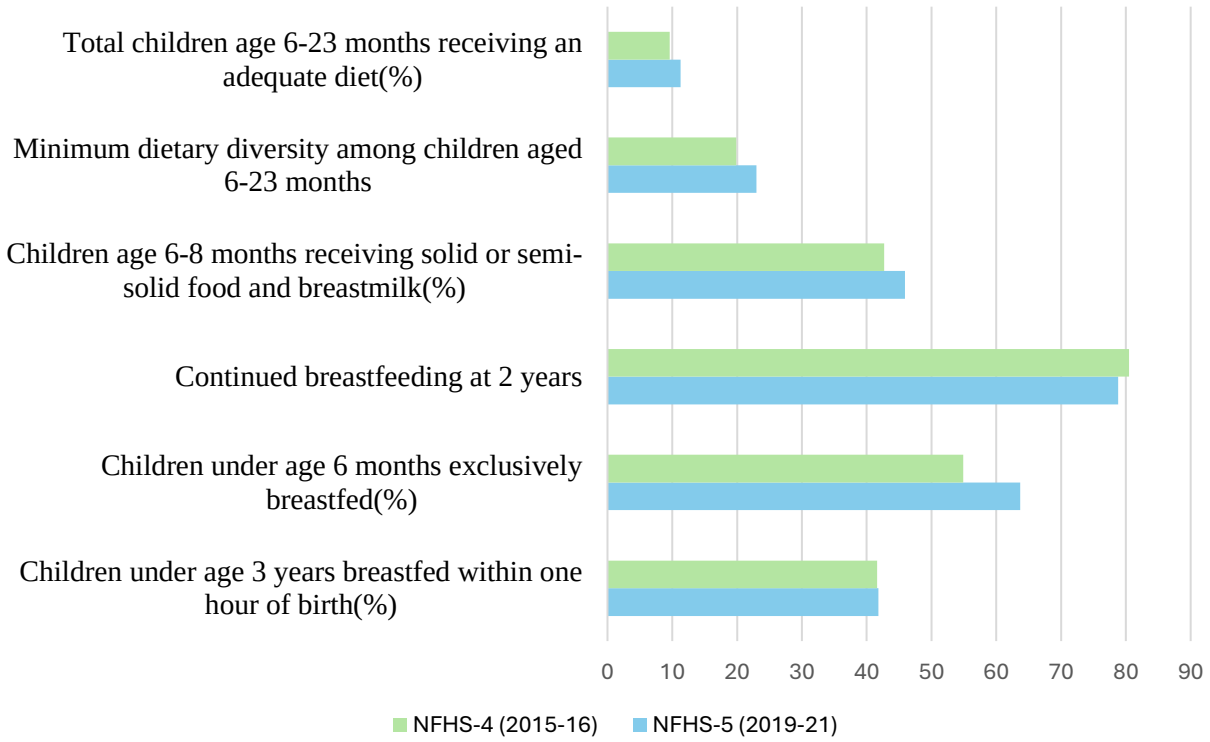
Feeding practices that do not adhere to the standards established by UNICEF and the WHO for assessing IYCF procedures are referred to as inappropriate IYCF. According to recent studies, the national prevalence of EBF in India was 63.7%, surpassing the WHO Global Nutrition Target (GNT). Although this is a commendable success, further work is needed to improve the incidence of EBF and other breastfeeding habits in order to significantly lower the morbidity and stunting associated with diarrhoea in India.

Furthermore, recent studies have shown that there is a significant level of poor practices in feeding complementary foods in India. Such improper practices in feeding complementary foods greatly lead to the high rates of undernourishment, low weight, and wasting in Indian children.



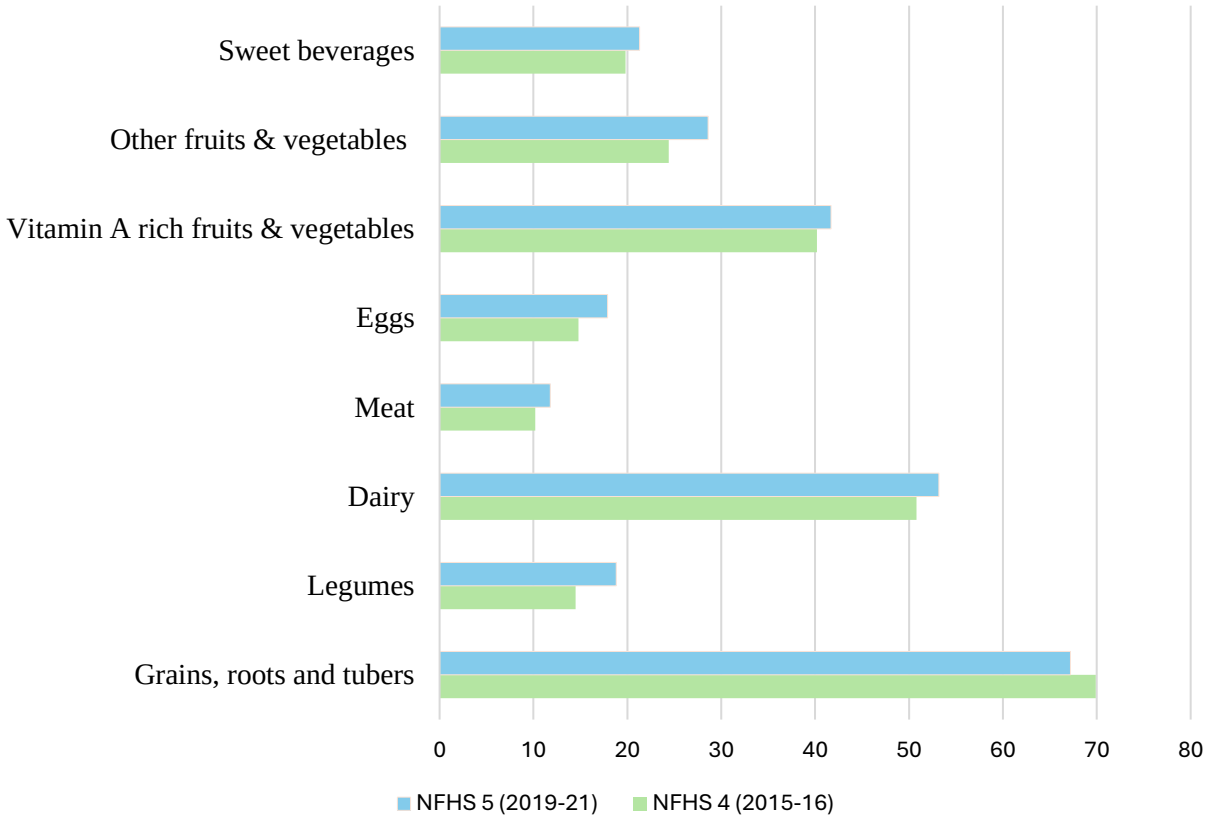
Source - https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf

Status Of Breastfeeding and Other IYCF Practices In India



Source - https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf

Consumption Of Food and Beverages Statistics



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GOI INITIATIVES TO IMPROVE IYCF

1. Integrated Child Development Services

Established on October 2, 1975, the ICDS is currently among the most extensive and distinctive early childhood development programmes globally. The approach India has taken to provide early childhood education and break the cycle of malnutrition, sickness, learning difficulties, and death is represented by the Integrated Child Development Services. [11]

It aimed to achieve the following –

- to enhance the health and nutrition of kids between the ages of 0 and 6
- to lay the foundation for a child's healthy growth in both body and mind
- to Reduce sickness, mortality, malnutrition

Supplementary Nutrition

This entails controlling nutritional anaemia, preventing vitamin A deficiency, and monitoring growth in addition to providing supplemental food. To identify children under the age of six and expectant and nursing moms, a survey is sent to every family in the community. For three hundred days a year, they receive additional feeding assistance. Anganwadi centres seek to reduce the caloric disparity between the average intake of calories for women and children in low-income and disadvantaged communities and the recommended daily intake by offering supplementary feeding.

Two essential activities that are carried out are surveillance of nutrition and growth. Youngsters under the age of three are weighed every month, and those three and older are weighed every three months. All children under six years old have weight-for-age growth cards kept on file, which aids in identifying growth slowdowns and evaluating nutritional health. Severely malnourished youngsters are also sent to medical services and given special supplementary feeding.

2. Mothers' Absolute Affection (MAA)

The "MAA" Programme was launched on 5th August 2016 nationally. It aims to enhance breastfeeding rates by promoting, protecting, and supporting breastfeeding practices through health systems. [12] The key objectives of the programme are listed below-

Create a Supportive Environment

- Raise awareness through targeted campaigns to encourage optimal breastfeeding practices.
- Focus on expectant and nursing mothers, families, and the general public.
- Emphasize breastfeeding as a vital intervention for the survival and growth of children.
- Utilize mass media communication to raise awareness and create demand for breastfeeding support.

Strengthen Lactation Support Services:

- Provide reinforcement support through qualified community health workers and healthcare professionals in public health facilities.
- Train all ANMs, ASHAs, and staff in government institutions on breastfeeding support. Mothers' meetings will be facilitated by ASHAs who will engage the community in support of breastfeeding. If a breastfeeding woman needs additional assistance, she will be directed to a medical facility, the ANM sub-centre, or the monthly VHNDs.
- Establish comprehensive lactation management units to ensure the availability of pasteurized, safe donor human milk.
- Provide expressed mother's breast milk suitable for feeding ill and low birth weight infants.

Recognition and Rewards:

- Acknowledge and reward healthcare facilities with high breastfeeding rates and effective lactation management.
- Promote optimal feeding practices, supported by ASHA workers and medical professionals.
- Celebrate World Breastfeeding Week annually from August 1st to 7th.

3. POSHAN ABHIYAAN

POSHAN Abhiyaan aims to tackle malnutrition in India through a multi-faceted approach encompassing convergence, behaviour modification, IEC (Information, Education, and Communication) advocacy, training, capacity building, innovations, and demand generation. The program delivers a set of six core services which includes early childhood non-formal education, Supplemental nutrition, Nutrition and health awareness, Vaccinations, Health examinations, Referral services. [13]

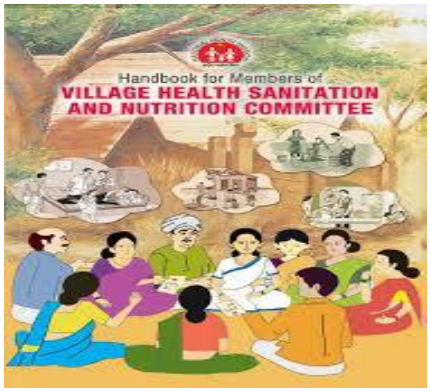
The initiative emphasizes the "First 1000 Days" and integrates activities on the Jan-Andolan Dashboard, centring around IYCF topics with key activities including mass media and digital media initiatives, Interpersonal Communication (IPC), Community participation through community-based activities, Celebration of POSHAN Maah and POSHAN Pakwada and Complimentary feeding (Poorak Aahar) demonstrations in villages.

The primary goal of POSHAN Abhiyaan is to enhance the quality of Anganwadi service delivery and utilization of essential Anganwadi services to reduce stunting in India's most malnutrition-burdened districts. The program aims to ensure adequate nutrition and overall development for expectant mothers, new mothers, and their children.

As the overseeing authority, POSHAN Abhiyaan,

- Oversees, monitors, set goals, and direct nutrition-related activities across all Ministries.
- Maps and integrates various schemes to combat hunger.
- Implements an ICT-based Real Time Monitoring system.
- Rewards States and Union Territories (UTs) for achieving goals.
- Provides Anganwadi Workers (AWWs) with incentives for using IT-based technologies.
- Manage the disposal of AWWs' registration forms.

4. Village Health Sanitation and Nutrition Days (VHSNDs)



VHSNDs serve as a crucial link between communities and healthcare facilities, ensuring that essential health services are accessible to expectant mothers, mothers, children, couples, and teenage girls. [14] The involvement of local representatives and departments such as Social Welfare's Integrated Child Development Services is vital for comprehensive service delivery. The structured and regular nature of these sessions, coupled with effective planning and community engagement, makes VHSNDs a pivotal component in the effort to enhance public health at the grassroots level. Through continuous education and awareness efforts, this initiative not only improves health immediately but also promotes long-term healthy habits and an increase in the demand for healthcare services.

Key Characteristics of VHSNDs

- VHSNDs are held once a month in each community, typically at Anganwadi or designated centres. This regularity ensures continuous engagement and service provision.

- ANMs, based on beneficiary lists created by AWW and ASHA, formulate a monthly plan for their respective areas. This planning ensures that all necessary services are organized and available.

- Information about the service providers, including the date and time of VHSNDs, is prominently displayed in AWCs and Sub Centres. Beneficiaries receive notifications through the MCP card and direct communication from ASHA and AWW a day in advance, ensuring awareness and preparedness.

- Essential medications and supplies are provided as per the plan, ensuring comprehensive service delivery during the VHSND sessions. These sessions last a minimum of four hours, with at least one hour dedicated to group counselling, enhancing health education and awareness.

- The services provided during VHSNDs are meticulously recorded in the MCP card, RCH register, and other relevant registers. This documentation ensures accountability and continuity of care.

- The primary service providers include ASHAs, Multi-Purpose Workers (MPWs), and ANMs. They are supported by AWWs, helpers, and village-level representatives from Panchayati Raj and the Department of Rural Development. This multi-stakeholder involvement is crucial for the successful delivery of services and community engagement.

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5. IMS ACT 2003

The Indian government has recognized the critical importance of breastfeeding for the health and well-being of infants and has taken legislative measures to safeguard and promote this practice. The purpose of the initial IMS Act of 1992 was to control the manufacturing, distribution, and use of feeding bottles, baby meals, and alternatives to breast milk. However, recognizing the need for more robust measures to close potential loopholes and improve the effectiveness of the Act, the Indian government introduced significant amendments in 2003. This amendment aimed to further safeguard breastfeeding practices and protect expectant and nursing mothers from influences that might undermine exclusive breastfeeding.

The amended IMS Act introduced several critical provisions:

- **Prohibition of Promotion**
  The Act forbids the promotion and advertising of baby meals, feeding bottles, and alternatives to breast milk. The dissemination of educational or instructive materials is one way that indirect promotion is prohibited.

- **Health Systems Restrictions**
  It is prohibited to use health systems to promote these products. Posters, free samples, and supporting health workers or their associations are some examples of this. Commissions on sales of these products are also prohibited.

- **Donations and Distributions**
  The Act forbids the healthcare system from donating or distributing instructional supplies, including materials about feeding bottles or alternatives to breast milk.

- **Labelling and Quality Control**
  State Government ministries that deal with newborn feeding bottles, infant meals, and infant milk substitutes are responsible for putting into effect provisions pertaining to their labelling and quality control.

- **Educational Materials**
  All promotional, instructional, and advertising materials aimed at expectant and nursing mothers must provide information about proper nursing techniques.

Unravelling the Complex Barriers to Effective IYCF Practices

The WHO and the UNICEF have established comprehensive guidelines for evaluating IYCF practices to ensure that infants receive adequate nutrition during their critical early years. However, numerous challenges and barriers impede the adherence to these guidelines. These barriers encompass a wide range of issues, including cultural beliefs, economic constraints, knowledge gaps, inadequate healthcare systems, and environmental factors. Understanding these challenges is essential for developing effective strategies to improve IYCF practices and thereby enhance the health and well-being of children.

This section explores the multifaceted barriers to promoting appropriate IYCF practices. By examining these challenges, we aim to highlight the critical areas that require targeted interventions to support caregivers in providing optimal nutrition to their infants and young children.

1. **Cultural and Traditional Beliefs**

Misconceptions about breastfeeding and complementary feeding are prevalent among many caregivers. For instance, some caregivers hold the belief that colostrum, the nutrient-rich first milk produced by the mother after childbirth, is harmful to the newborn, which results in delayed initiation of breastfeeding, depriving infants of the essential nutrients and antibodies present in colostrum. Additionally, there are various myths surrounding the types of complementary foods appropriate for infants, which can lead to the introduction of unsuitable or inadequate foods that fail to meet the nutritional needs of growing children. [15]

Elders, often regarded as the custodians of traditional knowledge and practices, exert a strong influence over young mothers. While their intentions are generally well-meaning, they sometimes perpetuate outdated or incorrect feeding practices that are not aligned with current health guidelines. This generational transmission of misconceptions and outdated practices poses a significant barrier to the adoption of optimal IYCF practices, highlighting the need for targeted education and community engagement to address and rectify these culturally ingrained beliefs.

2. **Knowledge and Awareness Gaps**

A significant barrier to optimal IYCF practices is the widespread lack of information and awareness among caregivers. Many caregivers do not possess accurate knowledge about the critical benefits of exclusive breastfeeding for the first six months of an infant's life, nor do they fully understand the importance of timely and appropriate complementary feeding. This knowledge gap often leads to suboptimal feeding practices, such as premature introduction of complementary foods or continued reliance on breastfeeding alone beyond the recommended period. The deficiency in awareness extends to understanding the nutritional requirements of infants and the types of foods that can meet these needs effectively. [16]

3. **Economic Constraints**

Economic constraints pose a formidable barrier to the adoption of optimal Infant IYCF practices. Food insecurity, driven by economic hardship, significantly hampers a family's ability to provide a diverse and nutritionally adequate diet essential for proper complementary feeding. As a result, many families are forced to rely on cheaper, less nutritious foods that do not meet the dietary needs of growing infants, thereby exacerbating the risk of malnutrition. [17]

In addition to food insecurity, work demands create substantial challenges for mothers, who must return to work soon after childbirth. The need to resume employment often forces mothers to discontinue exclusive breastfeeding earlier than recommended, as the demands of the workplace are not conducive to maintaining breastfeeding practices. Limited maternity leave, lack of breastfeeding support at the workplace, and inadequate facilities for expressing and storing breast milk further complicate the situation. These economic pressures not only affect breastfeeding rates but also hinder the ability to establish and maintain effective feeding routines, ultimately impacting the overall health and development of the child.

4. **Psychosocial Barriers**

Psychosocial barriers significantly impact the successful implementation of optimal IYCF practices. One of the primary challenges is the lack of social support from family and the community. Effective breastfeeding and appropriate complementary feeding often require encouragement and assistance from those around the mother. However, many mothers find themselves without this crucial support network, which can discourage them from adhering to recommended feeding practices. The absence of encouragement and practical help can lead to feelings of isolation and overwhelm, making it more difficult for mothers to persist with exclusive breastfeeding and timely introduction of complementary foods. [17]

Furthermore, maternal mental health issues present another critical psychosocial barrier. Conditions such as postpartum depression and chronic stress can severely undermine a mother's ability to breastfeed and care for her child effectively. The emotional and psychological burdens associated with these conditions can decrease a mother's confidence in her ability to nourish her child adequately and can reduce her capacity to engage in sustained breastfeeding and proper complementary feeding.

KEY RECOMMENDATIONS FOR IMPROVING IYCF

It is essential to create and put into practice efficient methods and interventions in order to solve the obstacles that stand in the way of the best practices for IYCF. Improving IYCF practices can have a major positive impact on children's general health and nutritional status, especially during the crucial first 1000 days of life. The main suggestions for encouraging and supporting ideal feeding patterns are provided in this section.

These cover a variety of strategies, such as policy modifications, community-based interventions, educational programmes, and improvements to healthcare systems, that will help foster an

environment that supports families and carers in giving their children the best nutrition possible, thereby promoting the long-term health and development of future generations.

1. Address cultural beliefs and traditional practices

- Develop educational campaigns that leverage respected community members and healthcare providers to dispel myths and misconceptions about breastfeeding and complementary feeding.
- Partner with community leaders and traditional birth attendants to promote IYCF practices that align with current health guidelines.

2. Enhance knowledge and awareness

- Develop and disseminate educational materials (e.g., posters, pamphlets) in local languages.
- Utilize mass media channels (e.g., radio, television) to broadcast educational messages about IYCF practices.
- Train healthcare professionals on the importance of IYCF counselling and provide them with the necessary resources to support mothers.

3. Improving psychosocial support

- Encourage fathers and family members to attend healthcare visits and IYCF counselling sessions to increase their understanding and support of recommended practices.
- Offer accessible counselling services for mothers experiencing postpartum depression, chronic stress, or other mental health challenges. Ensure these services are non-stigmatizing and culturally sensitive.
- Implement stress reduction programs such as mindfulness, relaxation techniques, and support for time management to help mothers cope with daily stressors.

4. Address economic constraints

- Provide financial assistance to poor families to help cover the costs of nutritious foods for infants and young children.
- Explore social safety net programs that can improve access to healthcare and education on IYCF practices.

5. Strengthen healthcare systems

- Ensure that healthcare facilities have adequate supplies and equipment to support breastfeeding mothers (e.g., lactation consultants, comfortable breastfeeding areas).
- Implement policies that promote breastfeeding, such as maternity leave policies.

CONCLUSION

The importance of proper nutrition in the early years of life, from birth to the toddler stage, in ending the cycle of hunger across generations is underscored through a detailed examination of IYCF practices. The period from pregnancy to the toddler years is a crucial period for promoting healthy development, brain growth, and overall health. Malnutrition, which can appear as undernutrition, hidden hunger, or excess weight, remains a worldwide issue affecting child death rates, intellectual growth, and future economic success.

Enhanced IYCF practices, as advocated by WHO and UNICEF, are essential in addressing these challenges. These practices not only support immediate physical and cognitive development but also lay the foundation for better health outcomes throughout life. These are also crucial for reducing stunting and wasting, enhancing immune function.

The detrimental effects of poor maternal nutrition are highlighted in the report, which contributes to low birth weight and perpetuates the cycle of malnutrition. By improving maternal nutrition and educating mothers on IYCF practices, we can significantly enhance good nutrition among children. This report emphasises how important it is to implement focused treatments during the crucial first 1,000-day timeframe. These interventions consist of encouraging exclusive breastfeeding, making sure that supplemental feedings are given on time and in the right amount, and assisting with maternal nutrition. Additionally, addressing barriers such as inadequate healthcare access, lack of education, and socio-economic factors is essential for the successful implementation of these practices.

According to India's nutritional statistics, the proportion of stunted, underweight, and wasted children has generally decreased, which is consistent with the improvement in the percentage of IYCF indicators. The degree of early initiation of breastfeeding, however, has barely changed. The NFHS data shows a noticeable increase in the consumption of sugary beverages, which may be detrimental to young children's nutritional health and a significant contributing factor to the growth in the number of overweight children. The ICDS scheme, MAA project, VHSNDs, and POSHAN Abhiyan are just a few of the initiatives the Indian government has implemented to enhance IYCF practices. The IMS Amendment Act of 2003 and other policy initiatives have significantly enhanced IYCF practices. In addition to the breastfeeding indicators, it is important to improve the overall supplemental feeding indicators to guarantee that young infants receive enough nourishment to succeed in their future endeavours. To enhance the national IYCF statistics, the suggested schemes and programmes should be implemented more thoroughly, particularly in districts where the IYCF indicators are doing poorly.

In conclusion, breaking the intergenerational cycle of malnutrition requires a multifaceted approach that prioritizes enhanced IYCF practices and maternal nutrition. This approach not only improves the immediate health and development of children but also contributes to long-term societal benefits by fostering healthier, more productive populations. Investing in early nutrition is not just a smart health move, but it's also a critical economic and development strategy.

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21st June 2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr Simran Kaur Antal** was associated with **IQVIA Consulting and Information Services India Private Limited ("IQVIA")** on the **Enhanced Infant and Young Child Feeding (IYCF) practices and their impact on breaking the intergenerational cycle of malnutrition** as a part of the curriculum during the period from **22nd April 2024** till **21st June 2024**

This certificate is being issued to recognize successful completion of her internship.

For IQVIA Consulting and Information Services India Pvt. Ltd

VARINDRA
Digitally signed by VARINDRA
Date: 2024.06.21 21:39:48 +05'30'

Varindra B
Director - Human Resources, South Asia

Certificate of Approval

The Summer Internship Project of titled **Enhanced Infant and Young Child Feeding (IYCF) practices and their impact on breaking the intergenerational cycle of malnutrition** at **IQVIA, New Delhi** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted.It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

01/07/2024

Name of the Mentor DR. ALTAF YOUSUF MIR
Designation ASSOCIATE PROFESSOR
IIHMR, Delhi

FEEDBACK FORM

(Organization Supervisor)

Name of the Student: Dr Simran Kaur Antal

Summer Internship Institution: IQVIA Consulting and Information Services India Private Limited

Area of Summer Internship: Global Public Health : RMNCHA + Nutrition

Attendance: 98%.

Objectives met:

- Created timely reports for various health and nutrition projects.
- Developed an understanding of the project objectives and goals and supported the team in completing the work as per stipulated deadlines.

Deliverables:
Created reports and conducted data analysis for the following projects :-
① Revision of EDL in Mizoram ② Drug SCM in Mizoram (As-is assessment) ③ District Health Systems Strengthening in India ④ SQUEAC of IMAM programs in Nepal ⑤ National Micronutrient Survey in Tajikistan 2024

Strengths: ① Good report writing skills ② Skilled at data analysis and deriving conclusions from large data sets ③ Assessing health and nutrition programs being implemented globally and in India to create concept notes and recommendations ④ Time management ⑤ communication skills

Suggestions for Improvement: ~~None~~
① Upgrade existing data analysis skills for timely submission of reports. Softwares such as R, STATA, NVivo and Tableau ~~can help~~ are helpful for the same.

Signature of the Officer-in-Charge (Internship)
(MANJARI SHARMA)
IQVIA - PH

Date: 14/06/24
Place: Delhi

FEEDBACK FORM

(IIHMR MENTOR)

Name of the Student: Dr. Simran Kaur Antal

Summer Internship Institution: IQVIA

Area of Summer Internship: Global Public Health: RMNCHA+
Hospital Systems Strengthening

Attendance: Good

Objectives met: Yes

Deliverables: All deliverables are met

Strengths: Resourceful, Sincere,

Suggestions for Improvement: Keep learning

01/07/2024

Signature of the Officer-in-Charge (Internship)

Date: 01/07/2024
Place:

Simran Kaur Antal

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