STRENGTHENING VILLAGE INSTITUTIONS FOR DEVELOPING "NUTRI-SMART-VILLAGE" IN SELECTED VILLAGE OF VADODARA RURAL BLOCK OF VADODARA DISTRICT

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B.Sc. FOODS AND NUTRITION

(Dietetics)

STRENGTHENING VILLAGE INSTITUTIONS FOR DEVELOPING "NUTRI-SMART-VILLAGE" IN SELECTED VILLAGE OF VADODARA RURAL BLOCK OF VADODARA DISTRICT

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

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BY

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CERTIFICATE

This is to certify that the research work presented in this thesis has been carried out independently by ***Ms. Tanvi Kotadia*** *under the guidance of Dr. Hemangini Gandhi in pursuit of Masters of Science (Faculty of Family and Community Sciences) with major in Foods and Nutrition (Public Health Nutrition) and this is her original work.*

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ABBREVIATIONS

AAY – Antyodaya Anna Yojana
ANM – Auxiliary Nurse Midwife
APL – Above Poverty Line
ASHA – Accredited Social Health Activist
AWC – Anganwadi Centre
AWW – Anganwadi Worker
BPL – Below Poverty Line
CF – Complementary Feeding
CNNS – Comprehensive National Nutrition Survey
CNSG – Comprehensive Nutrition survey in Gujarat
EIBF – Early Initiation of Breast Feeding
FANTA – Food and Nutrition Technical Assistance
FHW – Female Health Worker
FPS – Fair Price Shop
GLVs – Green Leafy Vegetables
ICDS – Integrated Child Development Services
IYCF – Infant and Young Child Feeding
IYCN – Infant and Young Child Nutrition
MAD – Minimum Acceptable Diet
MDD – Minimum Dietary Diversity
MFF – Minimum Meal Frequency
MO – Medical Officer
NA – Not Applicable
NFHS – National Family Health Survey
NGO – Non-Governmental Organization
NSV – Nutri Smart Village
OBC – Other Backward Class
PDS – Public Distribution System
PHC – Primary Health Centre
PRI – Panchayati Raj Institution
SC – Scheduled Caste
SDGs – Sustainable Development Goals
SHG – Self-Help Group
ST – Scheduled Tribe
THR – Take-Home Ration
UNICEF – United Nations International Children's Emergency Fund
VI – Village Institution
WASH – Water, Sanitation, and Hygiene
WCD – Women and Child Development
WHO – World Health Organization

GLOSSARY

Annaprashan Diwas: It is an event observed in Anganwadi centers under the Integrated Child Development Services (ICDS) program to initiate complementary feeding for infants who complete six months of age.

Balanced Diet: A diet that includes a variety of different foods in appropriate proportions, providing all the essential nutrients—carbohydrates, proteins, fats, vitamins, and minerals—necessary for good health.

Carbohydrates: Organic compounds found in foods and living tissues, including sugars, starch, and cellulose. They are a major source of energy for the body and are found in foods like bread, rice, pasta, and fruits.

Complementary Foods: These are foods given to infants in addition to breast milk or formula, typically introduced around six months of age, to meet their growing nutritional needs. Examples include pureed fruits, vegetables, and cereals.

Dietary Diversity: The measure of the variety of food groups consumed over a reference period, reflecting nutrient adequacy in the diet. A higher dietary diversity score indicates a better likelihood of meeting daily nutritional requirements.

Fats: Nutrients that provide a concentrated source of energy, support cell growth, protect organs, and help in the absorption of certain vitamins. Sources include oils, butter, nuts, and fatty fish.

IYCF Practices (Infant and Young Child Feeding Practices): A set of recommendations aimed at ensuring optimal nutrition for infants and young children, including exclusive breastfeeding for the first six months and the timely introduction of appropriate complementary foods while continuing breastfeeding up to two years or beyond.

Malnutrition: A condition that arises from an imbalanced intake of nutrients, either due to undernutrition (lack of sufficient nutrients) or overnutrition (excessive nutrient intake), leading to health problems.

Mamta Diwas: Also known as Village Health and Nutrition Day (VHND), Mamta Diwas is observed weekly in various regions of India to provide comprehensive maternal and child health services. Activities include antenatal and postnatal check-ups, immunizations, nutrition counseling, and growth monitoring for children under five. The initiative aims to improve maternal and child health outcomes by offering essential services at designated community centers.

Micronutrient Deficiencies: Conditions that occur when the body lacks essential vitamins and minerals required in small quantities for proper growth and development. Common deficiencies include iron, vitamin A, and iodine deficiencies.

Minerals: Inorganic elements that play critical roles in various bodily functions, such as building strong bones and teeth, regulating metabolism, and staying properly hydrated. Examples include calcium, potassium, and iron.

Minimum Acceptable Diet (MAD): A composite indicator measuring both the minimum dietary diversity and minimum meal frequency among children aged 6–23 months, reflecting the adequacy of infant and young child feeding practices.

Minimum Dietary Diversity (MDD): An indicator assessing whether children aged 6–23 months have consumed foods from at least five out of eight predefined food groups within the previous day, indicating adequate nutrient intake.

Minimum Meal Frequency (MMF): An indicator that evaluates whether children aged 6–23 months receive meals (including both solid and semi-solid foods) the minimum number of times per day appropriate for their age and breastfeeding status.

Proteins: Macronutrients composed of amino acids, essential for building and repairing tissues, producing enzymes and hormones, and supporting overall growth and development. Sources include meat, legumes, dairy products, and nuts.

Stunting: A condition characterized by low height for age in children, resulting from chronic undernutrition during the most critical periods of growth and development, particularly in the first 1,000 days of life.

Suposhan Diwas: A designated day observed in certain regions to focus on nutrition-related activities and awareness programs aimed at improving the nutritional status of the community, particularly among women and children.

Undernutrition: A form of malnutrition where the intake of nutrients and energy is insufficient to meet an individual's needs, leading to weight loss, muscle wasting, and increased susceptibility to disease.

Underweight: A condition where an individual's body weight is considered too low for their age and height, often assessed using the Body Mass Index (BMI). It can result from inadequate nutrition or underlying health conditions.

Vitamins: Organic compounds required in small quantities for essential metabolic processes in the body. They are crucial for maintaining health, supporting growth, and preventing various diseases. Examples include vitamin C, vitamin D, and the B-complex vitamins.

Wasting: A severe form of malnutrition characterized by rapid weight loss and low weight-for-height, indicating acute undernutrition. It increases the risk of illness and mortality, particularly in children.

Nutri Smart Village: An initiative aimed at promoting nutrition-sensitive interventions in rural areas by integrating agricultural practices with nutritional outcomes. The approach involves community participation to enhance dietary diversity, improve food security, and reduce malnutrition rates among villagers.

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ABSTRACT

ABSTRACT

Background: Malnutrition remains a critical issue in India, especially undernutrition among children and women. Despite various interventions, challenges like limited nutrition awareness and inadequate access to nutritious foods persist. The Nutri Smart Village (NSV) was initiated by NITI Aayog to engage village institutions in addressing malnutrition through a multi-sectoral approach, integrating healthcare, agriculture, education, and sanitation.

Objective: The current study was planned with the broad objective to assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under “Nutri-Smart-Village”.

Methodology: This study was conducted in one of the Rural blocks of Vadodara district which was chosen purposively. The block consists of eight PHC villages, and one of the PHC village was randomly selected for the study.

The study was conducted in three phases: situational analysis, training and sensitization of village institutions, and monitoring of the action plan.

In Phase 1, a situational analysis was conducted, where 27 representatives from eight different village institutions, including Gram Sanjivni, Kisan Group, Pani Samiti, PRI members, dairy cooperatives, primary school staff, and health and ICDS workers, were enrolled. Pre-tested semi-structured questionnaires were used to assess the socio-economic profile, knowledge, and practices of these representatives regarding health, nutrition, and government programs and Nutri Smart Village (NSV). Eighty-seven mothers of children aged 6 to 24 months were enrolled to gather data on the nutritional status of their children through anthropometric measurements and 24-hour dietary recalls to assess Minimum Meal Frequency (MMF), Minimum Dietary Diversity (MDD), and Minimum Acceptable Diet (MAD). The study also evaluated knowledge and practices of mothers with regard to Infant Young Child Nutrition (IYCN); Water, Sanitation, and Hygiene (WASH). Furthermore, 117 upper primary school children were included in the study to assess their nutritional status and utilization of selected services.

In Phase 2, a comprehensive training module on Nutrition-Smart Villages (NSV) was developed in the vernacular language. Representatives from the selected village institutions were sensitized to increase their awareness of balanced diets, anemia prevention, Infant and

Young Child Nutrition (IYCN), malnutrition, and government program and NSV concept. An action plan for 8 weeks was developed to create awareness about nutri smart village concept at community level.

Phase 3 focused on monitoring the execution of the action plan over an eight-week period. Activities carried out by the village institutions, such as health screening camps, nutrition awareness campaigns, and educational sessions in schools, were documented. Post-intervention data collection included assessing the knowledge of village representatives, dietary practices of children aged 6 to 24 months, and the utilization of selected services of government programs such as the Mid-Day Meal (MDM), Iron-Folic Acid supplementation, deworming, and health check-ups.

Findings: In Phase 1, 48% of village institution representatives were in the age range of 36-45 years, 93% of the representatives were above Poverty Line (APL). Seventy-eight percent aware of early breastfeeding, colostrum, and exclusive breastfeeding duration. While 96% identified iron deficiency as a cause of anemia, only 33% knew about absorption inhibitors. 93% understood a balanced diet, but 96% were unaware of the Nutri Smart Village (NSV) concept. In children age 6 to 24 months, it was found that 46% were stunted, 15% were wasted and 29% were severely underweight also 56% of mothers-initiated breastfeeding within an hour, and 86% practiced exclusive breastfeeding for six months. However, 40% of children met minimum meal frequency, and 3% received a minimum acceptable diet. Out of 117 primary school children, 31.62% of children were stunted, and 35.04% were categorized as thin. Regarding services utilization, 82.91% children consumed IFA tablets, 80.34% took deworming tablets, and 100% had undergone health check-ups. MDM consumption was 81.2%

In Phase 2 of study sensitization workshop for representatives of village institution covered topics on balanced diets, anemia prevention, and IYCN. Awareness generation activities like rallies, health check-ups, wall painting, creating nutrition corner in schools, counselling of mothers of children 6 to 24 months and adolescents on nutrition and health were carried out by representatives of various VI’s.

In Phase 3, In representatives of village institution awareness of breastfeeding and complementary feeding increased, and knowledge of nutrient deficiencies linked to non-communicable diseases rose from 44% to 89%. In children aged 6 to 24 months dairy consumption improved from 63% to 69%, and fruit and vegetable intake increased from 64%

to 70%. The percentage of children meeting Minimum Dietary Diversity (MDD) rose from 18% to 24%, while those achieving Minimum Acceptable Diet (MAD) increased marginally from 3% to 5%.

In upper primary school children IFA tablet consumption increased from 83% to 93.1%, and participation in the Mid-Day Meal program rose from 81.2% to 95.7%.

Conclusion: The current study is the first of its kind conducted in Gujarat on sensitizing village institutions for the Nutri Smart Village (NSV) initiative. The intervention successfully engaged key community stakeholders, including Anganwadi centers, Gram Panchayats, schools, healthcare institutions, and farmer groups, creating a multi-sectoral approach toward improving nutrition and health awareness at community level. The study facilitated shift in dietary diversity among children aged 6 to 24 months, with increased dairy and fruit and vegetable consumption. However, challenges remain, particularly in improving the intake of Vitamin A-rich foods and achieving Minimum Acceptable Diet (MAD) standards. Additionally, the utilization of essential health services among schoolchildren, such as Iron and Folic Acid supplementation, deworming, and participation in Mid-Day Meals, improved post-intervention, indicating the effectiveness of targeted sensitization efforts. The structured approach, involving awareness activities, counseling sessions, nutrition corners, rallies, and health camps, fostered a holistic and sustainable model for nutrition interventions. The involvement of multiple local village institutions strengthened community participation, highlighting the importance of a collaborative approach to address malnutrition to achieve SDG goal 1,3.

INTRODUCTION

INTRODUCTION

Malnutrition remains one of the most significant public health challenges in India, affecting millions of children and adults across both urban and rural populations. Despite substantial economic growth and numerous government interventions, malnutrition continues to be a major barrier to individual well-being and national development. The consequences of malnutrition extend beyond just health, impacting education, productivity, economic development, and intergenerational progress. Malnutrition is a complex, multifaceted issue influenced by poverty, inadequate healthcare, poor dietary habits, lack of nutrition education, and socio-economic disparities.

Due to increased requirements for growth and development, infant and young children get depleted of many nutrients. Inadequate dietary intake leads to many diseases and consequential deaths. Early childhood is the period of a growth spurt, which, when lacks in the dietary intake, the consequences are irreversible throughout life.

To combat malnutrition effectively, a holistic and sustainable approach is required. One such initiative is the Nutri-Smart Village concept, which integrates agriculture, technology, and nutrition to create self-sufficient rural communities. This initiative aims to empower local institutions, promote nutrition-sensitive farming practices, and enhance dietary diversity to address the root causes of malnutrition. By strengthening village-level institutions and promoting sustainable agricultural practices, Nutri-Smart Villages have the potential to significantly reduce malnutrition rates in rural India. This introduction will explore the prevalence of malnutrition, its causes, its impact on health and development, the current status in India and Gujarat, and the role of Nutri-Smart Villages in addressing this challenge.

MALNUTRITION AND IT'S CONSEQUENCES

Malnutrition is a condition that results from an imbalance in nutrient intake, leading to either undernutrition or overnutrition. Undernutrition includes stunting (low height-for-age), wasting (low weight-for-height), underweight (low weight-for-age), and micronutrient deficiencies. On the other hand, overnutrition is associated with excessive calorie intake, leading to obesity and related health issues. However, in India, undernutrition is the more pressing concern, particularly among children, adolescent girls, and pregnant women.

Malnutrition weakens the immune system, making individuals more susceptible to diseases and infections. In children, malnutrition affects cognitive development, leading to poor

academic performance and reduced earning potential in adulthood. Among women, poor nutritional status during pregnancy can result in low-birth-weight babies, perpetuating the cycle of malnutrition across generations.

MAGNITUDE OF UNDERNUTRITION

Malnutrition remains a critical global health issue, affecting millions of children and adults worldwide. Despite progress in recent years, a significant portion of the population continues to suffer from stunting, wasting, underweight conditions, and micronutrient deficiencies. The data from various reports, including the Global Nutrition Report 2022, National Family Health Survey (NFHS-5) 2019-21, and the Comprehensive National Nutrition Survey (CNNS), highlight the severity of malnutrition at global, national, and regional levels.

Global undernutrition Scenario

According to the 2022 Global Nutrition Report, malnutrition remains a critical global health concern, affecting millions of children under five years of age. The report highlights the following key statistics:

- **Stunting (Low Height-for-Age):** Approximately 148.1 million children under five are stunted worldwide, accounting for about 22.3% of this age group.
- **Wasting (Low Weight-for-Height):** Around 45 million children under five suffer from wasting, representing 6.8% of the global child population.
- **Low Birth Weight:** An estimated 14.6% of infants worldwide are born with low birth weight, posing significant health risks.

Although these figures indicate a slight decline compared to previous years, they remain alarmingly high, emphasizing the urgent need for sustained global efforts to address malnutrition and improve child health outcomes.

Undernutrition in India

India faces severe malnutrition challenges, as revealed by the NFHS-5 (2019-21). The survey reports that 35.5% of children under five years are stunted, while 19.3% are wasted, both figures being higher than global averages. Furthermore, 32.1% of children in this age group are underweight. Malnutrition also extends to women, with 57% of women aged 15-49 years suffering from anemia, highlighting a widespread iron deficiency issue.

The National Family Health Survey (NFHS-5) 2019-21 provides the latest statistics on malnutrition in India:

- **Stunting:** 35.5% of children under five years are stunted.
- **Wasting:** 19.3% of children under five years are wasted.
- **Underweight:** 32.1% of children under five years are underweight.
- **Anemia Among Women (15-49 Years):** 57% of women in this age group suffer from anemia, indicating widespread iron deficiency.

Undernutrition in Gujarat

Gujarat exhibits even higher rates of malnutrition compared to the national average. According to NFHS-5, 39% of children under five years are stunted, while 25.1% suffer from wasting, indicating acute malnutrition. Additionally, 39.7% of children under five are underweight. These statistics underscore severe nutritional deficiencies, highlighting the necessity for targeted nutrition interventions at the state level.

- **Stunting:** 39% of children under five are stunted, higher than the national average.
- **Wasting:** 25.1% of children under five are wasted, indicating acute malnutrition.
- **Underweight:** 39.7% of children under five are underweight.

IYCN practices in India

In addition to these indicators, Infant and Young Child Nutrition (IYCN) practices play a crucial role in shaping early childhood nutrition. The NFHS-5 data indicates that 41.8% of children under three years were breastfed within one hour of birth, while 63.7% of children under six months were exclusively breastfed. Furthermore, 41.3% of infants aged 6-8 months received solid or semi-solid food along with breastmilk. These figures reflect a pressing need for awareness and intervention programs to improve IYCN practices in the country.

- **Early Initiation of Breastfeeding:** 41.8% of children under three years were breastfed within one hour of birth.
- **Exclusive Breastfeeding:** 63.7% of children under six months were exclusively breastfed.
- **Introduction of Complementary Foods:** 41.3% of children aged 6-8 months receive solid or semi-solid food and breastmilk.

IYCN practices in Gujarat

The IYCN indicators in Gujarat show some areas of concern. The NFHS-5 data reveals that only 32.2% of children under three years were breastfed within the first hour of birth, which is lower than the national average. However, 80.3% of children under six months were exclusively breastfed, a promising figure. The introduction of complementary feeding is also relatively low, with 38.8% of infants aged 6-8 months receiving solid or semi-solid food along with breastmilk. These trends indicate the need for stronger advocacy and programmatic interventions to improve infant and young child feeding practices in the state.

- **Early Initiation of Breastfeeding:** 32.2% of children under three years were breastfed within one hour of birth.
- **Exclusive Breastfeeding:** 80.3% of children under six months were exclusively breastfed.
- **Introduction of Complementary Foods:** 38.8% of children aged 6-8 months receive solid or semi-solid food and breastmilk.

The global burden of malnutrition is unacceptably high, with nearly half of all deaths in children under five years linked to poor nutrition (Black, 2013). Stunting in early life can have long-term effects on health, physical and cognitive development, learning and earning potential, thereby placing an immense human and economic toll at the individual, household, community and national level. A global review on child stunting and economic outcomes revealed a 1 cm increase in height was associated with a 4% increase in wages for men and a 6% increase in wages for women (McGovern, 2017). Investing in the reduction of child malnutrition is paramount for human and economic development.

Despite substantial economic growth in India over most recent decades, chronic malnutrition (stunting) in children under five years of age reduced by only one-third between 1992 and 2016 and remains alarmingly high, with 38.4% of children stunted in the country (NFHS, 1992; IIPS, 2017). Anaemia in India is a severe public health problem among women, adolescent girls and young children. In addition to increased morbidity and negative effects on physical well-being (weakness and/or fatigue), anaemia is associated with delayed mental and psychomotor development and an increased risk of maternal mortality (WHO, 2017).

Poor nutrition, leading to iron deficiency, is the principal underlying factor in more than 60% of all anaemia cases (Kasselbaum, 2016). More than half of all women of reproductive age and children under five years were anaemic (IIPS, 2017). As shown in Figure 1.1, the estimated 447 million persons with anaemia, causes India to contribute almost one quarter to the global burden as calculated by the Global Burden of Disease in 2016 (Kasselbaum, 2016).

Figure 1.1: The burden of malnutrition among children and adults in India (presented in millions)

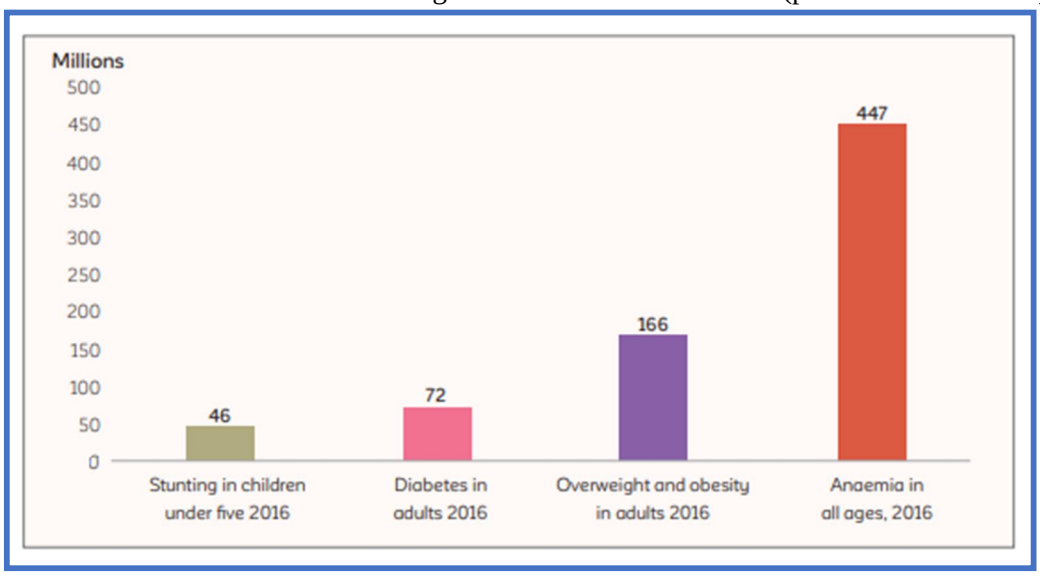


Figure 1.1 source - Stunting - Joint Child Malnutrition Estimates, 2019; Diabetes - IDF DIABETES ATLAS, Eighth edition, 2017; Overweight and obesity -Global Health Observatory (GHO) data, 2018; Anaemia -, The Global Burden of Anaemia, 2016 and Global Burden of Disease Study, 2013.

India is home to almost one-fifth of the world's population and has undergone a nutrition transition from an underweight to an overweight population during recent decades (Agrawal, 2002; Dandona, 2017). This has come at significant cost to population health and well-being and to already overburdened health systems. In 2016, the five leading causes of disability-adjusted life years (DALYs) in India were ischaemic heart disease, chronic obstructive pulmonary disease, diarrhoeal diseases, lower respiratory infections, and cerebrovascular disease and the top five risk factors for DALYs were child and maternal malnutrition, air pollution, dietary factors, high blood pressure, and high blood glucose (Dandona, 2017).

According to the CNNS (2016–18), the Malnutrition in pre-school children (0–59 months) are as follows:

- 35% of children under five were stunted (HAZ <-2 SD)
- 17% of children under five were wasted (WHZ <-2 SD)
- 33% of children under five were underweight (WAZ <-2 SD)
- 11% of children 6–59 months were acutely malnourished as measured by MUAC (MUAC-for-age<-2 SD)
- 5% of children 6–59 months were acutely malnourished as measured by absolute MUAC (MUAC +2 SD)

- 1% of children under five were overweight as measured by triceps skinfold thickness (TSFT) (TSFT-for-age >+2 SD)
- 2% of children 1 to 4 years were overweight as measured by subscapular skinfold thickness (SSFT) (SSFT-for-age >+2 SD)

In Figure 1.2**,** it is shown that different forms of malnutrition, including stunting, wasting, underweight, and MUAC < 125 mm**,** vary with age among children under five in India, based on data from the CNNS 2016–18**.** The stunting rate (green line)**,** which indicates chronic malnutrition, gradually increases from infancy and peaks between 24–36 months at around 40%**,** before fluctuating and remaining high until 59 months. This suggests that prolonged nutritional deficiencies significantly affect growth, particularly in early childhood. The underweight rate (blue line) follows a similar pattern, increasing steadily and stabilizing around 25–35%**,** with a peak at approximately 30 months**,** reflecting the cumulative impact of both chronic and acute malnutrition.

The wasting rate (red line), which represents acute malnutrition, starts high at around 20% in the early months but declines after 6 months, stabilizing around 10–15%**.** This pattern indicates that many infants suffer from acute malnutrition early in life, possibly due to inadequate exclusive breastfeeding or poor feeding practices, but some recover as they grow. Additionally, the MUAC < 125 mm indicator (dotted red line)**,** which measures severe acute malnutrition, is only assessed for children aged 6–59 months. It starts at a relatively high level in infancy but steadily declines, staying below 5% after 24 months**.** This trend suggests that severe acute malnutrition is more prevalent in the first year of life but decreases with age.

Overall, Figure 1.2 highlights the critical importance of the first two years of life, as malnutrition rates increase sharply during this period. Infants (0–6 months) are particularly vulnerable to acute malnutrition, while children 6–24 months face the highest risk of stunting and underweight due to poor complementary feeding and inadequate nutrition. Beyond 24 months, the effects of chronic malnutrition persist, with high rates of stunting and underweight, underscoring the long-term impact of early-life nutritional deficiencies. These findings emphasize the need for targeted interventions, especially in the first 1,000 days of life, to prevent malnutrition and improve child health outcomes.

Figure 1.2: Percentage of stunting, wasting, underweight and MUAC < 125 mm among children under five by age in months, India, CNNS 2016–18

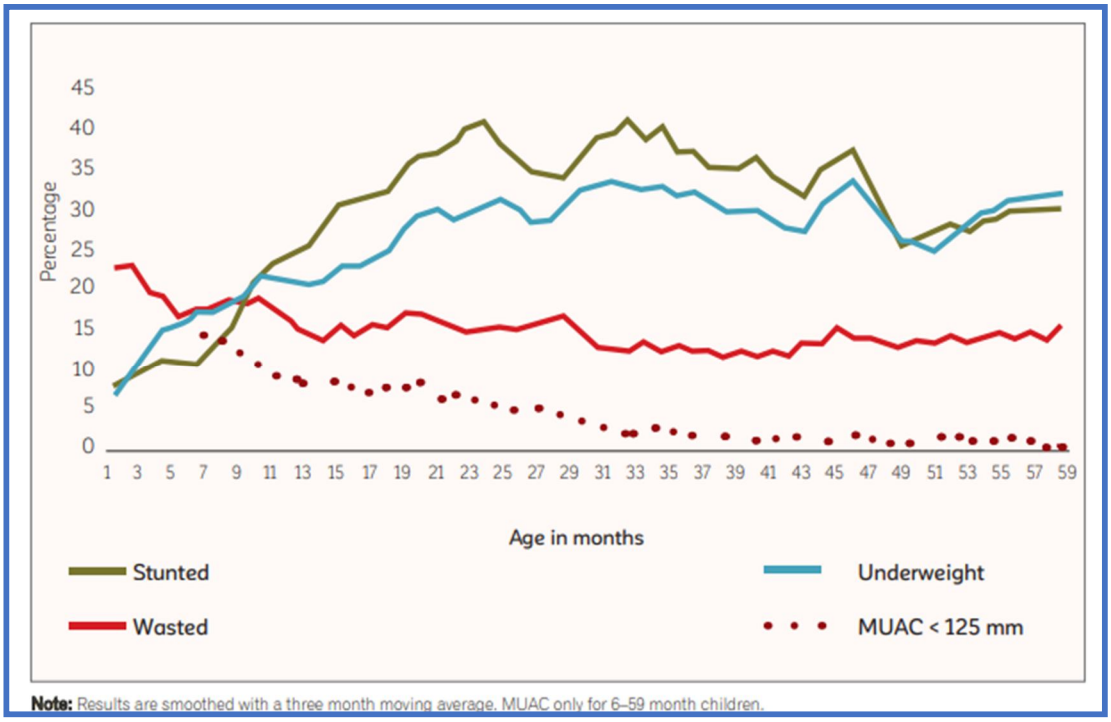


Figure 1.2 CNNS 2016-2018

The data from global, national, and regional reports emphasize the urgency of addressing malnutrition through targeted interventions and policies. Despite some improvements, malnutrition remains a serious public health concern in India, particularly in states like Gujarat, where rates of stunting, wasting, and underweight children remain alarmingly high. Strengthening IYCN practices, enhancing maternal nutrition, and implementing community-driven nutrition programs are crucial steps toward improving the nutritional status of vulnerable populations.

Addressing these challenges requires a multi-sectoral approach involving government initiatives, community participation, and sustained awareness campaigns to ensure better nutrition and health outcomes for future generations.

CURRENT STRATEGIES TO COMBAT MALNUTRITION

POSHAN Abhiyaan, launched by the Prime Minister of India, is a comprehensive multi-ministerial initiative aimed at eradicating malnutrition in the country by 2022. This holistic strategy focuses on improving nutritional outcomes for children, pregnant women, and nursing mothers by addressing the multifaceted causes of malnutrition. The program targets districts

with the highest malnutrition burden, aiming to reduce stunting through enhanced delivery and utilization of crucial anganwadi services. Central to POSHAN Abhiyaan is its emphasis on the first 1000 days of a child's life, recognized as a critical period for nutritional intervention. By coordinating efforts across various governmental departments and stakeholders, the initiative strives to implement a comprehensive package of services and interventions, tackling malnutrition through a unified, multidimensional approach.

In the year 2021, as part of Azadi Ka Amrit Mahotsav, to commemorate the 75th year of Independence of India a programme on “Nutrition Smart Village” was initiated to strengthen the Poshan Abhiyan. This new initiative aims to reach out to 75 villages across India through the network of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) which is in operation at 13 centres in 12 States of India besides the coordinating institute located at Bhubaneswar said Union Agriculture Minister Shri Narendra Singh Tomar while addressing an event organized by Indian Council of Agriculture Research today in New Delhi. The objectives of the initiative are promoting nutritional awareness, education and behavioural change in rural areas involving farm women and school children, harnessing traditional knowledge through the local recipe to overcome malnutrition and implementing nutrition-sensitive agriculture through homestead agriculture and Nutri-garden. To achieve the goal of Malnutrition free villages, intensive awareness campaigns and field activities will be undertaken for focusing on the concept of Nutri-village / Nutri-food / Nutri-diet/ Nutri-thali etc. for strengthening the Poshan Abhiyan.

The Suposhit Gram Panchayat Abhiyaan by the Govemment of Indiais aimed at improving the nutritional outcomes and well-being of targeted population across the country. This initiative focuses on improving nutrition by strengthening implementation of nutrition related services, in convergence with multiple stakeholders at the local level, and ensuring active community participation. The significance of the Suposhit Gram Panchayat Abhiyaan extends far beyond the mere recognition of achievements. It serves as a powerful catalyst for change, inspiring communities to embrace sustainable practices and innovative approaches in their fight against malnutrition through positive competition.

This initiative supports the achievement of Sustainable Development Goals 2 & 3 (SDG2- end hunger, achieve food security and improved nutrition and SDG 3- ensure healthy lives and promote well-being for all ages) at local level. Suposhit Gram Panchayat Abhiyaan focuses on improving nutritional outcomes through practices such as use of millets in HCM & THR,

development of Poshan Vatikas/nutri-gardens in AWCs, using its produce for preparation of HCM for the beneficiaries, diet diversity and use of local food etc.

WHAT IS A NUTRI-SMART VILLAGE?

A Nutri-Smart Village is a sustainable, community-led initiative that integrates nutrition-sensitive agriculture, health interventions, and local governance to improve food security and combat malnutrition. The initiative was launched by the Indian Council of Agricultural Research (ICAR) to transform rural villages into self-sufficient nutrition hubs.

Figure 1.3 source – PIB, ministry of agriculture and Farmers Welfare

NUTRI- SMART VILLAGE MODEL

Nutri Smart Village is a village where there is no hunger and food insecurity. All families are aware about the importance of 'First 1000 days- window of opportunities', for healthy children and healthy mothers. Community is aware of the linkages between agriculture, natural resources, WASH, income and nutrition education with nutrition. Every woman in the reproductive age group and adolescent children consume at least 5 food groups out of 10 on a regular basis. Every child receives home cooked balanced diet in appropriate frequency and consistency. An active village committee which promotes interconnections between agriculture, natural resources, WASH, nutrition, and protection of natural habitats. Families grow and buy safe, seasonal and locally produced food. Communities control the local 'haat' or market by creating the demand for safe and environment friendly products. The community value uncultivated foods and traditional recipes. Every family has access to safe drinking water.

Every family maintains safe sanitation and hand washing practices. Communities are aware of the government schemes and entitlements and can demand for their rights and entitlements.

Figure 1.4 Process of developing of Nutri Smart Village

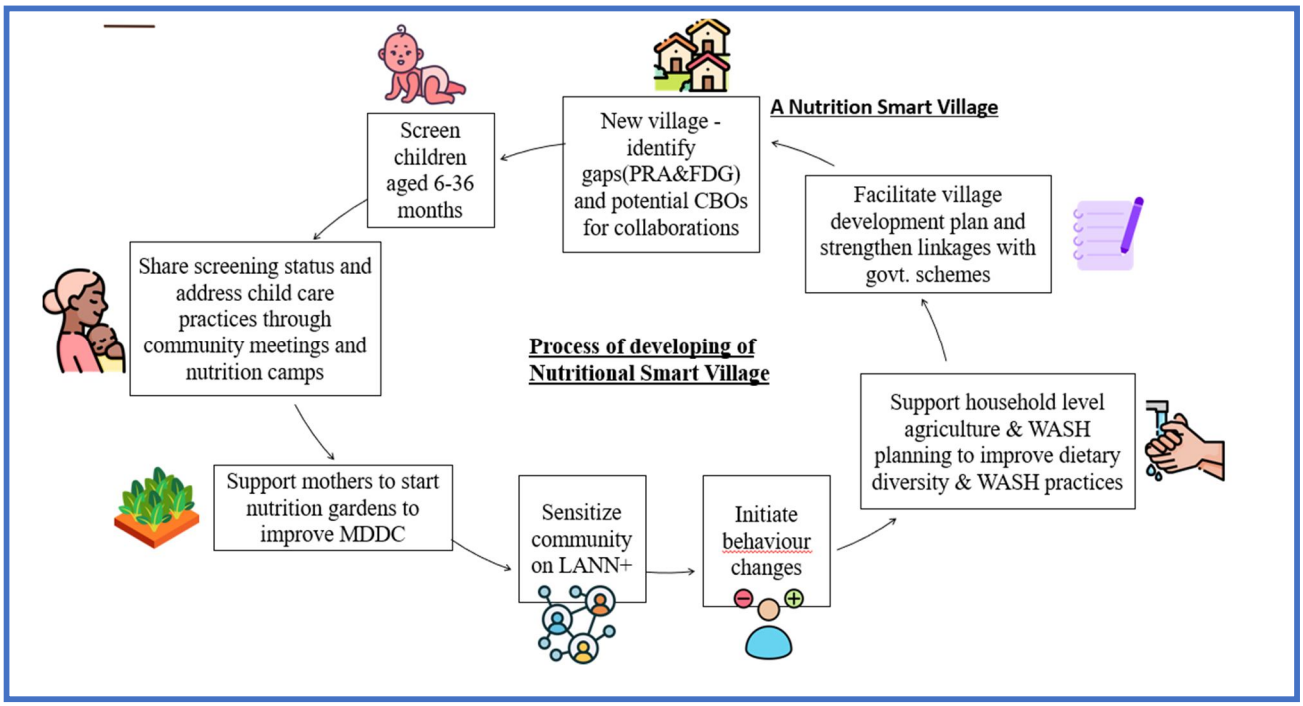


Figure 1.4 source – wealthungerlife

KEY COMPONENTS OF NUTRI-SMART VILLAGE (NSV)

To develop a sustainable Nutri-Smart Village, several strategies need to be implemented at the community level. The framework of NSV shown in the figure 1.5 highlights essential components that contribute to achieving nutrition security and strengthening rural livelihoods.

Nutri Environment Building

Nutri Environment Building plays a crucial role in creating awareness and fostering community participation in nutrition-related initiatives. It includes:

- Campaigns in schools and anganwadis: Organizing educational campaigns to instill healthy eating habits from an early age and sensitize caregivers about maternal and child nutrition.
- Rallies and exhibitions on Nutri-literacy: Engaging the community through interactive events that promote the importance of a balanced diet and government nutrition schemes.
- Wall writings and slogans: Spreading key messages on nutrition through visual communication in public spaces to reinforce awareness.

- Competitions among school children: Encouraging young minds to participate in quizzes, poster-making, and storytelling on nutrition themes, fostering knowledge retention and interest in healthy practices.

These initiatives help in spreading nutritional awareness and mobilizing the community toward adopting sustainable dietary habits.

Nutri Capacity Building

Capacity building is essential to ensure that village institutions and local stakeholders are equipped with the necessary skills and knowledge to sustain the Nutri-Smart Village model. This involves:

- Awareness camps: Conducting sessions to educate mothers, school children, and village leaders on malnutrition, dietary diversity, and government welfare programs.
- Trainings on nutrition needs: Strengthening the knowledge of village representatives, ASHA workers, and anganwadi workers on essential nutrition interventions, maternal and child health, and WASH practices.
- Interface among different agencies: Establishing collaborations between local government bodies, NGOs, and community-based organizations to create a multi-stakeholder approach for achieving nutrition security.

To improve the malnutrition at village level, multiprong approach is required wherein different village institution and civil service organization can be a link between government program and community for optimal delivery of the program and its utilization by the respective target group.

Figure 1.5: Components of Nutri-Smart Village (NSV)

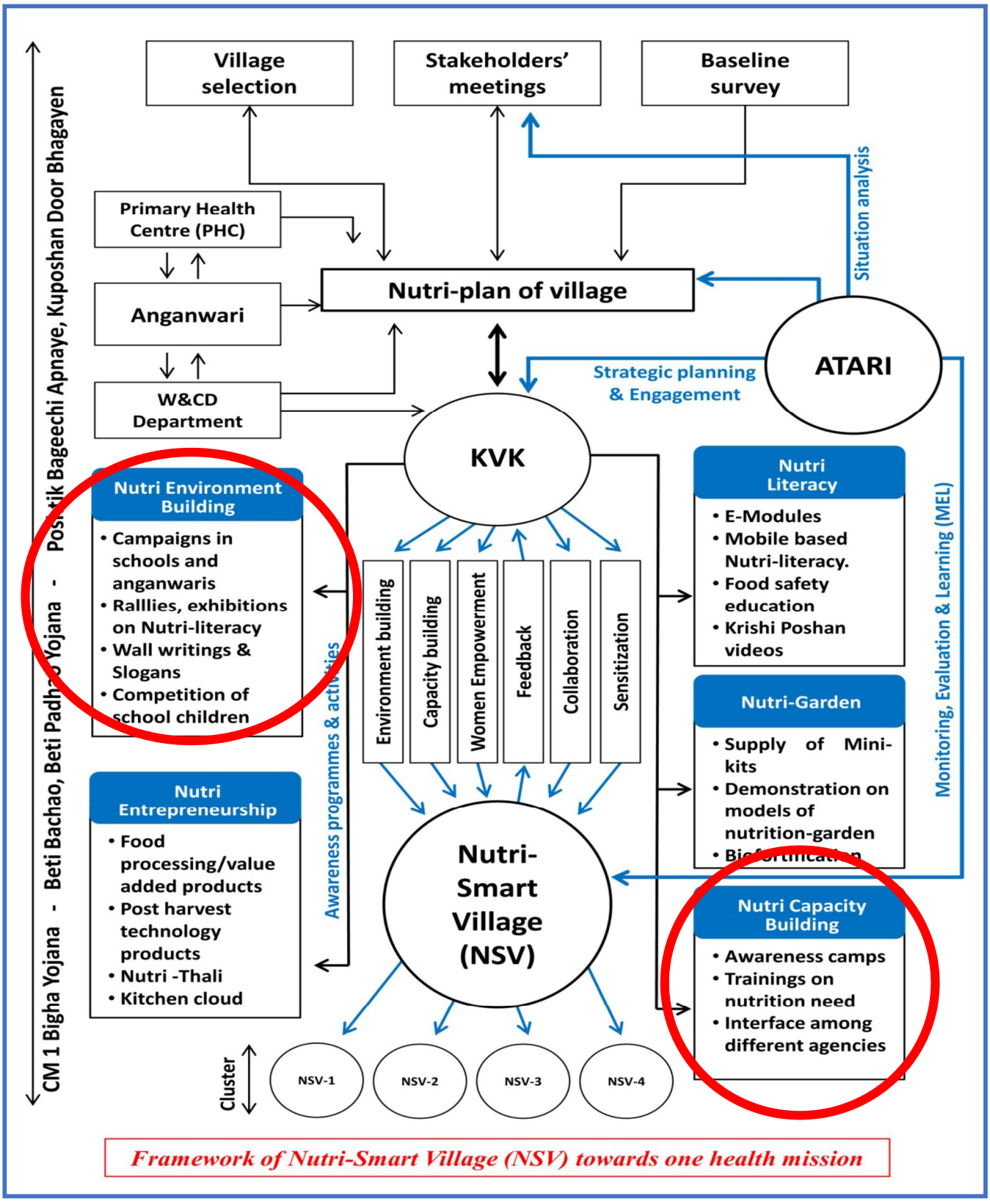


Figure 1.5 source – Nutri Smart Village, A framework for Nutrition and Health, ICAR-Agricultural Technology Application Research Institute, Zone-1, PAU Campus, Ludhiana-141 004

WHAT IS A VILLAGE INSTITUTION?

A village institution refers to an organized structure or body that functions within a rural community to address social, economic, and governance-related needs. These institutions can be formal or informal and play a crucial role in local decision-making, resource management, and community welfare. Common examples of village institutions include:

- Gram Sanjivni
- Gram panchayat
- Village Development Committee
- Kisan Group
- PRI Members
- Dairy Cooperative
- School
- Health and ICDS staff- ASHA, Anganwadi worker, ANM, PHC MO
- RKSK peer educator
- SHG representative/ Social action committee representative.

WHO IS A VILLAGE INSTITUTION REPRESENTATIVE?

A village institution representative is an elected or appointed member of a village-level institution who acts as a leader or liaison between the community and government or development agencies. These representatives include:

- Sarpanch (head of Gram Panchayat)
- ASHA Workers
- Anganwadi Workers
- SHG Leaders (leaders of women's self-help groups)
- Community Health Workers
- ANM
- MO
- School teacher and principal

Their role is to mobilize communities, implement government schemes, and ensure access to resources for rural development.

HOW CAN VILLAGE INSTITUTIONS HELP IN DEVELOPING A NUTRITION-SMART VILLAGE?

A **Nutrition-Smart Village (NSV)** is a rural community where efforts are focused on improving nutrition through sustainable agricultural practices, health interventions, and social empowerment. Village institutions and their representatives can help develop NSVs in the following ways:

1. **Enhancing Awareness and Behavior Change**
    - Conducting nutrition awareness campaigns through Gram Panchayats and SHGs.
    - Training villagers on healthy eating habits, hygiene, and breastfeeding practices using Anganwadi and ASHA workers.
2. **Promoting Nutrition-Sensitive Agriculture**
    - Encouraging kitchen gardens and biofortified crops through Farmer Producer Organizations.
    - Supporting organic farming and diversified cropping systems to improve food availability.
3. **Ensuring Access to Government Nutrition Schemes**
    - Helping villagers enroll in schemes like POSHAN Abhiyaan, Mid-Day Meal, and ICDS (Integrated Child Development Services).
    - Monitoring the implementation of Public Distribution System (PDS) for food security.
4. **Strengthening Women's Participation in Nutrition Initiatives**
    - Mobilizing women’s Self-Help Groups (SHGs) to set up small-scale nutrition enterprises (e.g., selling fortified food, running community kitchens).
    - Training women in income-generating activities that support household nutrition.

5. **Improving Maternal and Child Health Services**
    - Ensuring that pregnant women and children receive Iron-Folic Acid (IFA) supplements, vaccinations, and healthcare services.
    - Strengthening the role of Anganwadi Centers to monitor child growth and provide supplementary nutrition.
6. **Water, Sanitation, and Hygiene (WASH) Interventions**
    - Promoting safe drinking water, proper sanitation, and handwashing practices to reduce malnutrition-related diseases.
    - Collaborating with VHSNCs to monitor hygiene practices and sanitation facilities.
7. **Encouraging Community Participation and Monitoring**
    - Establishing community nutrition monitoring committees to track malnutrition cases.
    - Organizing village-level meetings to discuss nutritional issues and solutions.

HOW NUTRI-SMART VILLAGES HELP REDUCE MALNUTRITION

Nutri-Smart Villages provide sustainable solutions to malnutrition through nutrition-sensitive agriculture, dietary diversification, and improved community participation. The key ways in which Nutri-Smart Villages contribute to reducing malnutrition rates include:

- **Increasing Dietary Diversity:** Households have access to homegrown nutritious food, reducing dependency on market-based food.
- **Improving Micronutrient Intake:** The cultivation of biofortified crops helps combat hidden hunger (micronutrient deficiencies).
- **Empowering Women and Children:** Women play a crucial role in food production and nutrition education, ensuring better feeding practices for children.
- **Enhancing Local Food Systems:** By integrating agriculture with nutrition, communities become more self-sufficient and resilient.
- **Encouraging Behavioral Change:** Nutrition education programs create awareness about balanced diets and hygiene practices.

By implementing Nutri-Smart Villages across India, rural communities can break the cycle of malnutrition and poverty, ensuring a healthier and more productive population.

According to researcher Sarita Singh et.al The concept of a ‘Smart Village’ aims to promote long-term social, economic, and environmental welfare by empowering communities through better governance, entrepreneurship, and infrastructure. It focuses on providing essential services like sanitation, education, healthcare, and renewable energy, while ensuring resource efficiency and connectivity to urban areas. The idea is that technology serves as a catalyst for rural development, fostering education, business opportunities, health, and democratic engagement. In India, where villages are central, the Smart Village approach can drive national socio-economic progress. (Study and Development of Nutri Smart Village in Chhindwara District 2023) Karshan Chavda et.al in their study “Study and development of village as a smart village” defines smart village as bundle of services of which are delivered to its residence and businesses in an effective and efficient manner. “Smart Village” is that modern energy access acts as a catalyst for development in education, health, security, productive enterprise, environment that in turns support further improvement in energy access. In this report they focus on improved resource use efficiency, local self-governance, access to assure basic amenities and responsible individual and community behavior to build happy society. They are making smart village by taking smart decisions using smart technologies and services.

Therefore, the need for Nutri-Smart Villages becomes imperative to address the persistent malnutrition challenges in Gujarat by strengthening village institutions, fostering community participation, and implementing sustainable nutrition-sensitive interventions to achieve the goals of Poshan Abhiyan.

This approach may help in developing Suposhit Gram Panchayat initiative launched by WCD on 26 Dec and also in achieving some of the indicators of goal 2 and 3.

Rationale of the study

- NITI Aayog recently introduced the concept of Nutri smart village (NSV) to strengthen Poshan Abhiyan
- In the NITI Aayog document on Nutri Smart Village (NSV), none of the district of Gujarat is included in the 1st phase
- Malnutrition of mother, children, adolescent girl in Gujarat is cause of concern

- Nutri Smart Village reenforces the need to focus on vulnerable group of villages to achieve Poshan abhiyan targets
- NITI Aayog sept 2024, in a National seminar on Sustainable Rural Livelihoods highlighted that India's future growth hinges on the concept of SMART Villages, stressing the need for innovative strategies to build inclusive and self-reliant rural economies. Also highlighted empowering rural communities by connecting producers to larger markets and emphasized the importance of Gram Panchayats, women-led institutions, and civil society in driving rural progress through decentralization and community-driven initiatives
- Very recently in December 2024, Ministry of Women and Child Development has also launched Suposhit Gram Panchayat concept for tackling malnutrition in India
- To best of our knowledge, no study is carried out in Gujarat on Sensitization of village institutions for NSV

Board objective of the study

To assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under "Nutri-Smart-Village".

Specific objectives of the study

1. To assess the profile and knowledge of representative of village institution/committee about nutrition and government schemes about maternal and child health
2. To assess the nutritional status, dietary diversity, IYCN and WASH (Water, Sanitation, and Hygiene) practices among mothers of children aged 6 to 24 months
3. To evaluate the nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children
4. To sensitize representatives of village institutions to develop action plan for their village/villages towards NSV
5. To monitor the execution of action plan by village institutions towards developing NSV

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Malnutrition remains a pressing public health concern in India, affecting millions across both urban and rural communities. Despite economic advancements and various government-led interventions, it continues to be a major barrier to individual well-being and national development. The consequences of malnutrition go far beyond health, influencing education, workforce productivity, economic stability, and the well-being of future generations. This multifaceted issue stems from a combination of poverty, inadequate healthcare services, poor dietary habits, lack of nutritional awareness, and deep-rooted socio-economic disparities.

Among the most vulnerable are infants and young children, whose rapid growth and development demand adequate nutrition. Deficiencies during this critical phase not only led to severe health complications but also have long-term, often irreversible, effects on cognitive and physical development. Insufficient nourishment in early childhood heightens the risk of diseases and increases mortality rates, perpetuating the cycle of malnutrition across generations.

Addressing this crisis requires a comprehensive, community-driven strategy. The Nutrition-Smart Village (NSV) model emerges as an innovative and sustainable solution, integrating nutrition-sensitive and nutrition-specific interventions at the grassroots level. By promoting locally sourced, nutrient-rich food, empowering communities with nutritional education, and strengthening village-level institutions, this approach aims to create self-sufficient, health-conscious rural populations. The NSV initiative not only tackles malnutrition at its root but also fosters long-term resilience against food insecurity and undernutrition.

The focus of this chapter is on the available literature in relevance to **strengthening village institutions for developing "Nutri-Smart-Village" in selected village of Vadodara Rural block of Vadodara district.**

The current study was planned with the broad objective to assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under "Nutri-Smart-Village".

The literature is compiled under the following subtitles

1. The magnitude of undernutrition among children aged 6 to 24 months
2. Knowledge and practices about infant young child nutrition (IYCN) practices
3. Services utilization young child nutrition by mothers and primary school children
4. Evidence based intervention for improving IYCN
5. Current strategies to combat malnutrition
6. Developing Nutri Smart Village and its impact

1. The magnitude of undernutrition among children aged 6 to 24 months

Global scenario

As reflected in the image, far-reaching of low height as per the age (Stunting) is prevalent in under five years of age everywhere on the globe. More than half of the children under 5 resides in Asia. The golden opportunity of the first 1000 days of life is prominent to safeguard from future loss. Irreversible effects are caused by inadequate nutrition during early childhood (41.5%) and Low MUAC (50.4%) was found by the authors. The result revealed that different grades of malnutrition were seen more in boys than girls. (Sharma et al., 2006)

Pre-school children's nutritional status was assessed of 27 out of 197 tribal villages of Madhya Pradesh (Gond tribe). A total of 1022 children of 1-5 years were examined. The study highlighted a high prevalence of stunting in children with 51.6%, wasting 32.9% and more than sixty percent of the young children had less weight as per their age. (Rao, Yadav, Dolla et al., 2005)

A cross-sectional study was done in the villages resided by Sahariya tribes of Madhya Pradesh. Children between the age of 6 months to 5 years were assessed (n=593). The study discovered a high prevalence of undernutrition. The author revenled that the Prevalence of Sahariya tribe children who were stunted was 57.3%, wasted was 27.7%, and who were thin as per age was 59.2%. The author projected severe degree (Z score below -3 SD) for underweight (32.7%), stunted children (40%) and wasted children (11.1%). (Ghosh-Jerath et al., 2013)

Regional scenario

According to a recent disclosure by the Gujarat state government in the legislative assembly, over 5.40 lakh children in Gujarat are suffering from malnutrition as of January 2023. The government report states that within two years, 1.71 lakh children have recovered from malnutrition, and an expenditure of ₹510 crore has been incurred for addressing the issue.

In Ahmedabad alone, 48,303 children were found to be malnourished. The total number of malnourished children in Gujarat was reported to be 5,40,303 at the beginning of 2023, out of which 3,60,444 were moderately malnourished, and 1,79,859 were severely malnourished. The state government claims that various initiatives have resulted in a decline of 1.71 lakh malnourished children over the last two years.

A key concern highlighted in the report is the need for rehabilitation of over 47,000 severely malnourished children. Due to the critical nature of their condition, these children had to be admitted to nutrition rehabilitation centers (NRCs). The prevalence of malnutrition remains a pressing issue, despite government interventions.

Figure 2.1 Report underscores the persistent challenge of malnutrition in Gujarat in a newspaper

ગુજરાત વિધાનસભામાં રાજ્ય સરકારે કરેલી કબૂલાત

વાઈબ્રન્ટ ગુજરાતમાં ૫.૪૦ લાખ કરતાં વધુ બાળકો કુપોષણની સમસ્યાનો શિકાર

બે વર્ષમાં ૫૧૦ કરોડનો ખર્ચ, ૧.૫૧ લાખ કુપોષિત બાળક ઘટ્યાનો દાવો

| અમદાવાદ |

વાઈબ્રન્ટ ગુજરાતમાં જાન્યુઆરી ૨૦૨૫ની સ્થિતિએ ૫,૪૦,૩૦૩ બાળકો કુપોષિત છે, ગુજરાત વિધાનસભા ગૃહમાં ગુરુવારે રાજ્ય સરકારે આ આંકડા રજૂ કરવાની સાથે દાવો કર્યો છે કે, ગત વર્ષે જાન્યુઆરી ૨૦૨૩ની સ્થિતિએ ગુજરાતમાં ૬,૯૧,૪૪૪ બાળકો કુપોષિત હતા, આમ એક વર્ષમાં ૧.૫૧ લાખ કુપોષિત બાળકો ઘટ્યા છે. કુપોષણના કલંકને મિટાવવા માટે રાજ્ય સરકારે બે વર્ષમાં ૫૧૦ કરોડનો ખર્ચ કર્યો છે, વર્ષ ૨૦૨૩-૨૪માં ૨૬૪ કરોડ અને એ પછી ૨૪૫ કરોડની રકમ વાપરવામાં આવી છે. વિપક્ષના સવાલોના જવાબમાં સામે આવ્યું છે કે, ગુજરાતના ૧૨ જિલ્લામાં ૧.૯૩ લાખ બાળકો કુપોષણનો શિકાર છે, ૧૨ જિલ્લામાં સૌથી વધુ બનાસકાંઠામાં ૪૨,૪૧૯, પંચમહાલમાં ૩૫,૨૪૨, સાબરકાંઠામાં ૨૧,૭૪૨ બાળકો ઓછા વજનવાળા અથવા અતિ ઓછા વજનવાળા હોવાનું સામે આવ્યું છે.

૪૧ હજારથી વધુ ગંભીર કુપોષિત બાળકોને રિહેબિલિટેશન માટે દાખલ કરવા પડ્યા

એક સરકારી રિપોર્ટ પ્રમાણે ગુજરાતમાં છેલ્લાં ત્રણ વર્ષમાં ૪૧ હજારથી વધુ ગંભીર તીવ્ર કુપોષિત બાળકોને ન્યુટ્રીશન રિહેબિલિટેશન સેન્ટરમાં દાખલ કરવા પડ્યા છે. ગંભીર કુપોષણથી હજારો નાના બાળકો પીડાઈ રહ્યા છે, જેના લીધે તેમને ન્યુટ્રીશન રિહેબિલિટેશન સેન્ટરમાં રાખવામાં આવે છે. બાળકો ન્યુટ્રીશન રિહેબિલિટેશન સેન્ટરમાં દાખલ કરવા મામલે સમગ્ર દેશમાં ગુજરાત બીજા ક્રમાંકે છે.

The government claims to have implemented several schemes to combat malnutrition, including nutritional supplementation, improved maternal health programs, and healthcare initiatives. However, experts argue that long-term socioeconomic factors, food security, and public health policies need to be strengthened to ensure sustainable nutritional improvements.

This report underscores the persistent challenge of malnutrition in Gujarat and highlights the state's efforts in addressing it.

However, further research and policy interventions are needed to achieve long-term reductions in childhood malnutrition.

Surat region of Gujarat covering with rural and urban areas was taken to examine the under five years of children using a systematic random sampling method. Total of 3133 children was assessed. The study calls attention to the prevalence of underweight, stunting and wasting was 44%, 39% and 22.5% respectively. The authors applied logistic regression and concluded that the risk of undernutrition was significantly higher among children belonging to ST communities as compared to others. Also, the prevalence was significantly ($p<0.01$) higher among rural children (46.7%, 40.3%, & 23,7% respectively) as compared to urban children (32%, 32.5% & 16.4% respectively). (Meshram II, Rao, Reddy et al., 2016)

Research was conducted in the rural blocks of Vadodara on children aged 0-17 months. The projected prevalence of undernutrition by the author was 14% stunted children, 12% wasted children, and 18 percent of children had low weight as per their age. (Gandhi and Patni, 2017) Undernutrition among young children remains a critical public health concern. A study conducted in the Narmada district by Rana et al. (2019) found high rates of undernutrition among children under two, with 32.2% experiencing wasting, 34.5% stunting, and 39.7% being underweight. The study identified key factors influencing undernutrition, including maternal height, household income, and livestock ownership, emphasizing the urgent need for targeted nutrition programs. Similarly, Gandhi and Mehta (2020) assessed dietary practices among children aged 6-23 months in the Dediyapada block of Narmada district. The study revealed a low prevalence of minimum acceptable diets and inadequate consumption of protective foods, highlighting the severity of undernutrition in tribal areas.

Summary of findings on prevalence studies is presented in the Table 2.1

Table 2.1 – Reviewed studies of the prevalence of undernutrition in children at a glance (global)

GLOBAL				
Region	**Age group**	**Stunting (%)**	**Wasting (%)**	**Under Weight (%)**
Western China (Qu et al)	6-35 months	19.57	4.63	8.74
Indonesia (Ahmed et al)	6-23 months	27.8	22.5	26.3
Ethiopia (Kim, Nguyen, et al)	6-23 months	22.8	-	-
Madagascar (Moursi et al)	6-8 months 9-11 months 12-23 months	31 40 56	2 4 4	12 17 21
Northern Ethiopia (K Bayer et al)	12-23 months	33	12	28

Table 2.2 – Reviewed studies of the prevalence of undernutrition in children at a glance (India)

INDIA				
Region	**Age group**	**Stunting (%)**	**Wasting (%)**	**Under Weight (%)**
India (NFHS 5)	Under 5 years	35.5	19.3	32.1
India (CNNS)	0-4 years	34.7	17	35.8
Andhara Pradesh (devi and Geervani	13-24 months	21.5	8.1	-
Maharasthara (Aguayo et al.)	0-23 months	22.7	-	-
West Bengal (Stiller et al)	6-39 months	51.9	19	49.2
Madhya Pradesh (Sharma et al)	1-5 year	46.3	41.5	37.4
Madhya Pradesh (Yadav, Dolla et al)	1-5 year	51.6	32.9	61.6
Madhya Pradesh (Ghosh Jerath et al)	6 months to 5 years	57.3	27.7	59.2
Allahabad (Kumar et al)	Under 5 years	51.6	10.6	36.4

Table 2.3 – Reviewed studies of the prevalence of undernutrition in children at a glance (regional)

REGIONAL				
Region	**Age group**	**Stunting (%)**	**Wasting (%)**	**Under Weight (%)**
Gujarat (NFHS 5)	Under 5 years	39	25	40
Gujarat (CNNS)	0-4 years	39.1	17	34.2
Gujarat (CNSG)	Under 5 years	37.2	11.3	10.6
Junagadh (Ratnu)	1-5 years	49	10.7	26.4
Surat (Rao, Reddy, et al)	Under 5 years	39	22.5	44
Vadodara (Gandhi and Patni)	0-17 months	14	12	18
Vadodara (NFHS5)	Under 5 years	42.3	20.1	39.8

2. Knowledge and practices about infant young child nutrition (IYCN) practices

Global scenario

Zongrone et al. (2012) examined nationally representative data from Bangladesh to explore the relationship between infant and young child feeding (IYCF) practices and anthropometric indicators of nutritional status in children aged 0-23 months. Their findings revealed that appropriate complementary feeding among children aged 6-8 months was positively linked to higher height-for-age Z-score (HAZ) and weight-for-age Z-score (WAZ). The study also emphasized that a higher dietary diversity index (DDI) correlated with improved HAZ and WAZ. Additionally, children who met the minimum dietary diversity criteria had significantly higher HAZ compared to those who did not.

Rakotonirainy NH et al. (2014) conducted research in Madagascar's Moramanga and Morondava districts to assess dietary diversity among children aged 6-59 months. Their study found that early initiation of breastfeeding (within one hour of birth) was more common in Moramanga (53.5%) than in Morondava (24.0%). The practice of breastfeeding up to 12 months was widely observed in both locations, with 98.5% of children in Moramanga and 87.6% in Morondava continuing to be breastfed at this age. Almost half of the children received a diet meeting minimum adequacy standard, with the highest proportion recorded among those aged 12-17 months (65.1% in Moramanga and 47.8% in

Morondava). However, dietary adequacy declined from 18 months onward, particularly in Morondava, where only 24.8% of children aged 18-23 months met the minimum dietary requirements. Consumption of iron-rich foods was reported in 48.1% of Moramanga children and 57.3% of Morondava children.

Yonas et al. (2015) conducted a cross-sectional study at the community level in Ethiopia, involving 417 participants. Their research indicated that 81.1% (338 individuals) demonstrated adequate knowledge of infant and young child feeding (IYCF) practices, while 18.9% (79 individuals) lacked sufficient awareness. Despite this, inappropriate IYCF practices were prevalent, with 67.9% (283 children under 24 months) receiving improper feeding, whereas only 32.1% (134 children) were fed appropriately. The study also highlighted common harmful practices among mothers, such as pre-lacteal feeding, discarding colostrum, and using bottles for feeding.

Aguayo (2015) investigated complementary feeding practices among children aged 6-23 months across South Asia. The findings suggested that these practices were suboptimal, as only 57.4% of infants aged 6-8 months were introduced to soft, semisolid, or solid foods. Moreover, less than half of children within the 6–23-month age range were fed with the recommended frequency, and just about one-third met the minimum dietary diversity standards. Complementary diets were predominantly cereal-based, with limited consumption of fruits, vegetables, and animal-derived foods. Only one in three children consumed fruits and vegetables, while fewer than 20% had access to meat, fish, poultry, or eggs.

Kassa et al. (2016) conducted a cross-sectional study at the community level in Southern Ethiopia, involving 611 mothers with children aged 6-23 months. The study found that 72.5% of mothers introduced complementary feeding at the appropriate time, and 67.3% ensured that their children met the minimum meal frequency. However, dietary diversity remained notably low, with only 18.8% meeting the minimum standard. Overall, the proportion of children receiving adequate complementary feeding was significantly low, at just 9.5%.

Similarly, Neme K et al. (2017) carried out a cross-sectional study in Ethiopia, assessing mothers' and caregivers' knowledge and practices regarding complementary feeding. Their findings revealed that only 40% (104 participants) had adequate awareness and followed

appropriate complementary feeding practices, whereas 60% (156 participants) failed to introduce complementary foods on time. Many caregivers delayed complementary feeding due to limited knowledge and concerns about insufficient breast milk supply. Additionally, a significant number of children aged 6-23 months did not achieve the World Health Organization's (WHO) minimum dietary diversity recommendations. Consumption of animal-based foods, vitamin A-rich fruits and vegetables, and other nutrient-dense foods was particularly low among children included in the study.

Ahmad et al. (2018) conducted formative research in Indonesia to assess complementary feeding practices among children aged 6-23 months. Their findings revealed that nearly half of the children received complementary foods at the recommended time.

Moss et al. (2018) carried out the Sustainable Undernutrition Reduction in Ethiopia (SURE) evaluation study, which aimed to enhance the minimum acceptable diet (MAD) among children aged 6-23 months and reduce stunting in children aged 24-47 months. The study employed a theory-driven, mixed-methods approach that combined impact and process evaluations. It focused on integrating nutrition-related behavior change communication within the health and agriculture sectors while also emphasizing system strengthening and multi-sectoral collaboration.

Taha et al. (2020) conducted a cross-sectional analysis that found 72.2% of children were introduced to complementary feeding between 6 and 9 months of age. The majority (71.4%) consumed at least four food groups, aligning with the recommended minimum dietary diversity standards. However, less than half (47.3%) met the minimum meal frequency criteria, with non-breastfed children aged 6-23 months being the least likely to meet the standard (21.9%) ($p<0.001$). A considerable number of children were given sugary snacks, and overall, only 36.2% of six-month-old children achieved a minimum acceptable diet.

Forsido et al. (2019) conducted a cross-sectional study in southwest Ethiopia in 2019, utilizing a stratified multistage sampling approach to select 433 children aged 6-24 months. Data on demographics, socioeconomic status, and dietary intake were collected through a semi-structured questionnaire, while a 24-hour dietary recall was used to assess dietary diversity scores.

Findings from the study indicated that exclusive breastfeeding was practiced by 88.9% of children, while 75.6% continued breastfeeding until the age of two. Both early and delayed

introduction of complementary foods were observed in the study area. However, most mothers (82.9%) initiated complementary feeding at the recommended age of six months. The study also revealed that 83.9% of children did not meet the minimum dietary diversity criteria. Higher dietary diversity was associated with children aged 12-24 months, first-born children, and those whose parents had received formal education.

Domestic scenario

Karmee et al. (2017) conducted a cross-sectional study using a mixed-methods approach, combining a quantitative analysis with qualitative in-depth interviews, involving 374 participants. The study found that infant and young child feeding (IYCF) practices were generally suboptimal, with nearly half of the respondents exhibiting inadequate or improper feeding practices.

Similarly, Dhami et al. (2019) carried out a regional analysis in India, which highlighted significant variations in the introduction of complementary foods—solid, semi-solid, or soft—among infants aged 6-8 months. The highest prevalence was recorded in the southern region (61%), while the central and northern regions had the lowest prevalence (38%). Additionally, the study revealed that the minimum dietary diversity (MDD) was most commonly met in the South, whereas the Central region had the lowest percentage, at just 12%.

The prevalence of minimum meal frequency (MMF) and minimum acceptable diet (MAD) varied significantly across different regions of India. Factors influencing complementary feeding practices also differed regionally. In Northern and Eastern India, a higher household wealth index was a key factor in the implementation of complementary feeding, while in the North and Central regions, higher maternal education was strongly associated with achieving MMF and minimum dietary diversity (MDD). Addressing gaps in complementary feeding practices across the country will require both national and sub-national interventions, particularly targeting vulnerable mothers, such as those with limited education and minimal healthcare access.

A study conducted in selected blocks from three tribal districts of Maharashtra—Amravati, Gadchiroli, and Nandurbar—revealed that 65% of children were introduced to complementary feeding between six and seven months, aligning with the recommended age. However, in 20% of cases, the initiation of complementary feeding was delayed. This delay was primarily attributed to maternal beliefs, cultural myths, child illness, reluctance

to eat, or lack of awareness about the appropriate time to introduce complementary foods. According to WHO and UNICEF guidelines, only 13.3% of children received meals at the recommended

Sabreena et al. (2019) conducted a cross-sectional study in an urban setting to examine complementary feeding practices among mothers with children aged six months to two years. The study aimed to evaluate maternal awareness of complementary feeding, assess feeding practices, and identify factors contributing to inappropriate feeding. Despite most mothers having a sound understanding of breastfeeding and complementary feeding, the study revealed that the actual implementation of optimal feeding practices was significantly low.

Aguayo et al. (2016) carried out an in-depth analysis of Maharashtra's comprehensive nutrition survey, assessing the nutritional status and complementary feeding habits of 2,561 children aged 0-23 months. The study found that only 58.6% of infants aged 6-8 months were introduced to solid, semi-solid, or soft foods.

Menon et al. (2015) critically analyzed insights from the National Family Health Survey (2005-06), which included data from approximately 18,463 children aged 0-23.9 months. Additionally, a community-based cross-sectional study was conducted in Northwest Ethiopia to assess the prevalence of Minimum Acceptable Diet (MAD) among 506 children aged 6-23 months. The findings indicated that only 8.6% of infants and young children met the MAD criteria. Several factors, including maternal education, mothers' participation in household decision-making, birth order, and knowledge of feeding frequency, were significantly associated with achieving MAD. The study highlighted the lack of adequate nutrition education and counseling on infant and young child feeding practices for all mothers. It was recommended that efforts be strengthened to enhance maternal education on appropriate feeding practices and to collaborate with religious leaders to improve maternal knowledge on child nutrition. (Mulat et al., 2019)

A study conducted in Ethiopia assessed children's dietary diversity scores (CDDS) based on seven food groups using the 24-hour dietary recall method. The findings indicated that only 18.7% of children had access to an adequately diverse diet. The authors identified several key factors contributing to child undernutrition, with inadequate dietary diversity being a significant determinant. Among the least consumed food groups were flesh foods (6.2%) and vitamin A-rich fruits and vegetables (9.2%). In contrast, the consumption of

grains, roots, and tubers was notably high (89.8%), followed by eggs (43%). Other food groups, such as dairy products (29.8%), legumes and nuts (23.3%), and other fruits and vegetables (14.4%), were consumed at lower rates. (Abera et al., 2019)

In a study by Moursi et. al. (2008), researchers analyzed mother-infant dyads in Madagascar and reported that breastfeeding was widely practiced, with 79% of children still being breastfed in their second year of life. The study found that non-breastfed infants generally had a higher mean dietary diversity score than their breastfed counterparts. Grains, roots, and tubers were identified as the primary food source, contributing to a Dietary Diversity Score (DDS) of 1. More than half of the children consumed other fruits and vegetables, while at least half consumed flesh foods at DDS 4 and above. However, the intake of legumes, nuts, dairy products, vitamin A-rich fruits and vegetables, and eggs only became significant at DDS 6 and higher.

Belew et al. (2017) conducted a study in Northwest Ethiopia to evaluate the minimum dietary diversity (MDD) and meal frequency (MMF) among children aged 6-23 months. The findings indicated that dietary diversity was notably low, with only 17% of children meeting the MDD criteria, while 72.2% achieved the minimum meal frequency. Another study in West Gojjam, Ethiopia, assessed mother-child pairs and found that only 29.9% of children aged 6-23 months had an adequate dietary diversity. Additionally, household visits by health extension workers were significantly linked to improved dietary diversity. (Worku et al., 2020)

A cross-sectional study in southern Ethiopia, which included 417 children aged 6-23 months, highlighted that households cultivating green vegetables had significantly higher dietary diversity scores ($p = 0.032$). The study further revealed that mothers who received infant and young child feeding (IYCF) education during postnatal care and possessed greater maternal knowledge exhibited improvements in their children's dietary diversity. (Dangura & Gebremedhin, 2017)

Sakka et al. (2016) examined complementary feeding practices in Northern Ghana and reported that 57.3% of children aged 6-23 months met the minimum meal frequency, while only 35.3% achieved minimum dietary diversity across 24 food groups. Additionally, just 25.2% of children received a minimum acceptable diet, and only 14.3% were provided with appropriate complementary feeding.

Arimond and Ruel (2004) analyzed data from demographic and health surveys conducted in 11 countries and concluded that dietary diversity was significantly correlated with children's nutritional status across different age groups.

Rana et al. conducted a baseline study and found that only 14.7% of girls and 15% of boys received a diet that included four or more food groups, indicating low dietary diversity among children. The Suchana program (2015-2022) was designed to address child stunting through both nutrition-specific and nutrition-sensitive approaches. The nutrition-specific interventions included a comprehensive social and behavior change communication (SBCC) strategy aimed at promoting optimal infant and young child feeding (IYCF) practices, as well as maternal and child nutrition within the first 1,000 days. Meanwhile, the nutrition-sensitive component focused on increasing household income and improving food availability through home food production (HFP) initiatives. (Rana et al., 2017)

Chaadhary et al. conducted a community-based cross-sectional study in 2015, assessing children aged 6-36 months living in the urban slums of Ahmedabad's Girdhamagar ward. The study found that only 38.3% of children were breastfed within the first hour of birth, 28.6% within 24 hours, and 33% after 24 hours. While 54.8% of children were given colostrum, 60.5% received prelacteal feeds. The duration of breastfeeding varied, with 19.1% of children being breastfed for at least two years, 35.6% for six to twelve months, 30.4% for twelve to twenty-three months, and 14.3% for less than six months. Additionally, 26.2% of children were bottle-fed. The study also noted that meal frequency was adequate for 64.3% of children, but only 15.7% received dietary diversity from more than four food groups.

A hospital-based, cross-sectional prospective study was conducted by Srivastava G et al. in 2018 at a referral treatment center in Lucknow, India, over a six-month period. The study reported that 95% of non-breastfed infants received an adequate frequency of milk feeds, increasing to 100% in children aged 18-24 months. It was observed that 69% of children started complementary feeding at the appropriate time. Among breastfed and non-breastfed children, the minimum meal frequency was met by 60% and 69%, respectively, while the minimum dietary diversity was achieved by 60% across all age groups. The Complementary Feeding Index (CFI) was categorized as low in 32% of children, medium in 61%, and high in only 7%. Notably, in the 6–11-month age group, only 11% had a low CFI score, whereas in the 18–23-month group, this figure rose to 57%.

In 2019, Sandhya Rani Javalkar conducted a community-based cross-sectional study among mothers of children in Mangalore Taluka, Karnataka. Data were collected through personal interviews with 408 mothers using a structured and pretested questionnaire. The findings revealed similar trends in urban and rural areas for key infant feeding indicators. Exclusive breastfeeding under six months was reported at 47.8% in urban areas and 45.6% in rural areas. The introduction of solid and semi-solid foods was noted in 92.0% of urban and 90.0% of rural children, while the minimum meal frequency was met by 81.9% in urban and 83.3% in rural areas.

The study also highlighted that early breastfeeding initiation was slightly more common in rural areas (50%) compared to urban areas (42.8%). Similarly, continued breastfeeding was practiced by 60.4% of rural mothers and 50.7% of urban mothers. However, indicators such as minimum dietary diversity (21.3% in rural and 37% in urban) and minimum acceptable diet (20% in rural and 31.9% in urban) remained low in both regions.

A separate analysis using data from the National Family Health Survey (NFHS-4, 2015-16) examined dietary patterns among 73,852 to 74,038 children aged 6-23 months. Information on the consumption of 21 food items, seven food groups, and Adequately Diversified Dietary Intake (ADDI) was gathered based on a 24-hour maternal dietary recall. The findings indicated that overall dietary diversity was poor, with a mean dietary diversity score of 2.26 (95% CI: 2.24-2.27), and only 23% of children met the ADDI criteria. Given the widespread prevalence of inadequate dietary diversity, interventions aimed at improving food consumption and dietary variety among Indian children should be implemented universally, with less emphasis on socio-economic disparities. (S. Agrawal et al., 2019)

Regional data

In 2017, Gandhi and Patni conducted a study in the rural blocks of Vadodara, where 72% of lactating mothers correctly identified the appropriate age to begin complementary feeding. The research highlighted that over 80% of mothers continued both breastfeeding and complementary feeding. Among the children, 49% were given half a cup of food per feeding, while 38% were fed three to four times a day. Hygiene practices among mothers varied, with 64% washing hands before preparing food, 44% washing hands after cleaning their child’s feces, and 50% washing hands before feeding their child.

Additionally, a cross-sectional study involving 250 mothers from Waghodiya Taluka, Vadodara, examined complementary feeding practices among those with at least one child under two years old. The primary reasons cited for introducing complementary foods included "insufficient breast milk" and "concerns over poor child development." The study found that cow's milk was the most frequently used food when initiating complementary feeding. However, only 21.2% of mothers adhered to an ideal combination of food items for complementary feeding, and 58% provided meals fewer than the recommended times per day. Regarding hygiene practices, the most commonly reported measure (33%) was washing vegetables, followed by maintaining a clean kitchen (27%). The study also revealed that 95% of mothers were willing to continue breastfeeding while experiencing a fever, and 91% agreed to continue breastfeeding if their infant had a fever. (Trivedi et al., 2015)

A descriptive cross-sectional study conducted among 300 eligible mothers with children aged 0-23 months in Dabhoda, Gujarat, revealed that all mothers of children between 12-23 months continued breastfeeding up to two years. Complementary feeding was initiated at six months for 59.8% of the children. However, only 28.3% met the criteria for Minimum Dietary Diversity (MDD), while 95.6% achieved Minimum Meal Frequency (MMF). The proportion of children meeting the Minimum Acceptable Diet (MAD) standard was also 28.3%. (Chandwani et al., 2015)

Additionally, a community-based mixed-method study was conducted in the Narmada aspirational district of Gujarat among 253 children aged 6-23 months. Dietary patterns were assessed using a 24-hour dietary recall. The findings indicated that 38.3% of children consumed food from more than four food groups, 68.1% met the recommended minimum meal frequency, and 30.6% met the MAD criteria. The study highlighted that grains, roots, and tubers were the most frequently included food groups in complementary feeding, accounting for 84% of the diet. In contrast, non-dairy animal source foods were the least incorporated, and fewer than half of the children consumed other fruits and vegetables. The overall dietary habits of infants and young children aged 6-23 months were found to be inadequate. (Gandhi and Mehta, 2021)

Understanding knowledge and practices regarding IYCN is crucial for improving child health outcomes. Chandorkar and Miyawala (2015) assessed the gaps in infant and young child feeding (IYCF) practices among ICDS functionaries in Vadodara. The study found

that while some supervisors were aware of government programs for adolescent girls, most Anganwadi workers (AWWs) lacked knowledge about iron and folic acid (IFA) distribution criteria. Similarly, a study by Gandhi and Mousami (2020) in Anand and Vadodara districts revealed that only 50% of pregnant women had awareness about a healthy diet, and knowledge about anemia and contraceptive methods was significantly low in both districts.

The *Home-Based Mixed Farming (HBMF)* approach was evaluated in the Dediyapada block of Narmada district by Gandhi and Mehta (2020). The study introduced Nutri-kitchen gardens as a means to convey essential health messages through community-led programs. The intervention significantly improved dietary diversity and maternal knowledge about child nutrition. Similarly, a study by Thakar et al. (2019) in Porbandar district demonstrated how kitchen gardening contributed to food security by providing fresh vegetables and additional household income.

3. Services utilization of young child nutrition by mothers and primary school children

Services utilization of young child nutrition by mothers

Integrated Child Development Services (ICDS) play a crucial role in improving maternal and child nutrition in India. A study analyzing data from the National Family Health Survey (NFHS) 2016 found that the utilization of ICDS services was higher in rural areas compared to urban regions. However, overall service coverage remained suboptimal, particularly in densely populated states such as Uttar Pradesh and Bihar. The study highlighted that while supplementary nutrition services were more frequently accessed, other crucial components, such as health and nutrition education and preschool activities, were underutilized. Furthermore, there was a strong correlation between mothers receiving ICDS benefits during pregnancy and the likelihood of their children continuing to access these services, underscoring the significance of sustained maternal and child care (Sharma et al., 2016).

In another study conducted in urban Meerut, researchers assessed maternal satisfaction with supplementary nutrition services provided through Anganwadi centers. The study revealed that 58.5% of mothers were dissatisfied with the frequency of supplementary nutrition distribution. While all children received Take Home Ration (THR), it was noted that 100% of mothers shared it with other family members, potentially reducing its intended impact. Additionally, the study found that 63.2% of mothers lacked awareness about the importance of iron supplementation in childhood, and only 65.8% followed satisfactory handwashing

practices. These findings emphasize the need for improved service delivery, enhanced awareness campaigns, and behavioral change interventions to maximize the effectiveness of nutrition services for young children and their mothers (Gupta et al., 2023).

Navuluri Kranthi Kumar Reddy et al. (2020) conducted a study in Uttarakhand to evaluate the utilization of ICDS services. Their findings revealed high utilization of supplementary nutrition (94.5%) and health education (88.3%), while preschool education was comparatively lower (76.7%). The study highlighted disparities in utilization among different beneficiary groups, with adolescent girls and women of reproductive age showing the lowest engagement levels.

Similarly, Saranya Sivanesan et al. (2016) examined ICDS service utilization in coastal Karnataka. Their study found that 95.9% of children accessed supplementary nutrition, but only 48.7% of mothers attended nutrition and health education sessions. While 73.6% of mothers ensured regular growth monitoring, dissatisfaction with the quality of food provided at Anganwadi centers remained a concern. The study also noted that many children enrolled in private nursery schools did not fully utilize ICDS services.

Chudasama et al. (2013) assessed supplementary nutrition services in Gujarat across 60 Anganwadi centers. The study found that while 70% of children under three years received supplementary nutrition, coverage for children aged 3-6 years was significantly lower (51.7%). Pregnant women (88.3%) and lactating mothers (91.7%) showed higher engagement, but challenges in maintaining consistency and quality of nutrition services were evident.

In a study conducted in Gandhinagar, Chavada et al. (2022) analyzed the impact of supplementary nutrition on the nutritional status of children under six years of age. The study highlighted a high prevalence of stunting and wasting, despite ICDS interventions, indicating persistent nutritional deficiencies. The authors emphasized the need for stronger community engagement and improved program implementation to address these gaps effectively.

Latha and Venkatesh (2020) explored ICDS utilization patterns in urban and rural Bengaluru. Their findings suggested that while rural areas had better service reach, urban communities faced lower participation rates due to working mothers' inability to visit

Anganwadi centers regularly. The study underscored the necessity for flexible service delivery models to accommodate urban working populations.

A study by Vachhani et al. examined child healthcare service utilization in rural Surendranagar. The findings indicated that 43.51% of mothers-initiated breastfeeding within one hour of birth, and 66% practiced exclusive breastfeeding. The study highlighted a positive association between the nutritional status of children and the utilization of nutritional services, emphasizing the impact of maternal education on child health outcomes.

Rana et al. conducted a study assessed infant and young child feeding practices among 300 mothers with children aged 0-23 months in urban Gujarat. The results showed that 88% of children were breastfed early, 2.75% received pre-lacteal feeds, and 66% were exclusively breastfed. The study identified significant correlations between feeding practices and factors such as maternal education, socioeconomic status, and antenatal care, underscoring the need for awareness and better implementation of feeding programs.

A study by Chudasama et al. assesses infrastructure, service delivery, and utilization. The study, conducted across 12 districts of Gujarat, found that 48.3% of children received supplementary nutrition, while 61.7% of Anganwadi centers experienced supply interruptions. Additionally, only 20% of centers achieved full preschool education coverage, and regular health check-ups were conducted in just 30% of centers. These findings highlight critical service delivery gaps that need to be addressed to improve child nutrition and overall health.

The effective utilization of nutrition services by mothers and school children is essential to combat malnutrition. A study conducted in Surat city by Vakilna et al. (2018) assessed the knowledge, attitude, and practices of ICDS workers. The findings showed that although most AWWs had received in-service training, awareness about key services such as Ready-to-Eat (RTE) supplementary nutrition was low. The study emphasized the need for better promotion of RTE ‘Balbhog’ among children and improved awareness regarding preschool education and child growth monitoring.

Services utilization by primary school children

Patel and Pancholi (2018) conducted a study titled *"Mid-Day Meal Implementation in State of Gujarat"* that examined the effectiveness of the MDM scheme in the region. Their

findings indicated that the program was running successfully, with significant improvements in parameters such as student attendance, nutritional intake, and overall health status. However, the study also noted challenges in food quality consistency and logistical issues in meal distribution (Patel & Pancholi, 2018).

A more recent study by Bulsari, Pandya, and Vansiya (2021) focused on the impact of the COVID-19 pandemic on the MDM program in three districts of Gujarat. Their research, *"Mid-Day Meals during COVID-19 Pandemic: A Study of Three Districts of Gujarat,"* highlighted operational changes during the pandemic, where cooked meals were replaced by dry ration provisions due to lockdown restrictions. While this ensured continued access to food, the shift posed challenges in maintaining meal quality and nutritional balance (Bulsari et al., 2021).

The distribution of Iron and Folic Acid tablets is an essential intervention to combat anemia among school children. While several national reports have discussed the importance of the IFA supplementation program, state-specific studies in Gujarat remain limited. However, government health reports indicate that while awareness regarding IFA tablets has increased, compliance issues among students remain a concern, often due to fear of side effects such as nausea and gastrointestinal discomfort (Government of Gujarat Health Report, 2022).

Deworming programs, implemented under the National Deworming Day initiative, have been instrumental in reducing intestinal parasite infections among children. A government-commissioned survey in 2019 in Gujarat found that over 85% of the targeted school children received deworming tablets, with a noted reduction in reported cases of worm infections. However, a follow-up assessment in 2023 pointed out gaps in follow-up monitoring and reluctance among parents due to misconceptions about deworming medication (State Health Department Report, 2023).

Regular school health check-ups are crucial in early detection of health issues among children. A study by Mehta and Joshi (2020) assessed the implementation of health check-ups under Gujarat's school health program. Their findings revealed that while screenings were conducted annually, a lack of follow-up services and referrals for further treatment limited their effectiveness. The study recommended strengthening referral mechanisms and increasing parental awareness to enhance the program's impact (Mehta & Joshi, 2020).

Biswas et al. (2023) conducted a study in Deoghar, Jharkhand, to examine compliance with Iron and Folic Acid Supplementation (IFS) and deworming among school-going adolescents. The study found that IFS compliance was 27.5%, while 67.9% of students

adhered to deworming. Compliance with deworming was facilitated by religion, income, and prior knowledge. Barriers included irregular medication supply and low student awareness

In 2022, Iyer and Patel evaluated the Mid-Day Meal (MDM) Programme in rural schools of Vadodara and assessed the impact of Nutrition Health Education on the nutritional status of moderately and severely thin upper primary school children. The study found that 93% of the children consumed MDM.

4. Current strategies to combat malnutrition

Poshan Abhiyaan, launched by the Prime Minister of India, is a comprehensive multi-ministerial initiative aimed at eradicating malnutrition in the country by 2022. This holistic strategy focuses on improving nutritional outcomes for children, pregnant women, and nursing mothers by addressing the multifaceted causes of malnutrition. The program targets districts with the highest malnutrition burden, aiming to reduce stunting through enhanced delivery and utilization of crucial anganwadi services. Central to POSHAN Abhiyaan is its emphasis on the first 1000 days of a child's life, recognized as a critical period for nutritional intervention. By coordinating efforts across various governmental departments and stakeholders, the initiative strives to implement a comprehensive package of services and interventions, tackling malnutrition through a unified, multidimensional approach.

In the year 2021, as part of Azadi Ka Amrit Mahotsav, to commemorate the 75th year of Independence of India a programme on “Nutrition Smart Village” was initiated to strengthen the Poshan Abhiyan. This new initiative aims to reach out to 75 villages across India through the network of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) which is in operation at 13 centres in 12 States of India besides the coordinating institute located at Bhubaneswar said Union Agriculture Minister Shri Narendra Singh Tomar while addressing an event organized by Indian Council of Agriculture Research today in New Delhi. The objectives of the initiative are promoting nutritional awareness, education and behavioural change in rural areas involving farm women and school children, harnessing traditional knowledge through the local recipe to overcome malnutrition and implementing nutrition-sensitive agriculture through homestead agriculture and Nutri-garden. To achieve the goal of Malnutrition free villages, intensive awareness campaigns and field activities will be undertaken for focusing on the concept of Nutri-village / Nutri-food / Nutri-diet/ Nutri-thali etc. for strengthening the Poshan Abhiyan.

The Suposhit Gram Panchayat Abhiyaan by the Govemment of Indiais aimed at improving the nutritional outcomes and well-being of targeted population across the country. This initiative focuses on improving nutrition by strengthening implementation of nutrition related services, in convergence with multiple stakeholders at the local level, and ensuring active community participation. The significance of the Suposhit Gram Panchayat Abhiyaan extends far beyond the mere recognition of achievements. It serves as a powerful catalyst for change, inspiring communities to embrace sustainable practices and innovative approaches in their fight against malnutrition through positive competition.

This initiative supports the achievement of Sustainable Development Goals 2 & 3 (SDG2- end hunger, achieve food security and improved nutrition and SDG 3- ensure healthy lives and promote well-being for all ages) at local level. Suposhit Gram Panchayat Abhiyaan focuses on improving nutritional outcomes through practices such as use of millets in HCM & THR, development of Poshan Vatikas/nutri-gardens in AWCs, using its produce for preparation of HCM for the beneficiaries, diet diversity and use of local food etc.

5. Evidence based intervention for improving IYCN

The study aimed to assess the impact of the Alive and Thrive (A&T) initiative in enhancing Infant and Young Child Feeding (IYCF) practices to improve child survival, reduce disease prevalence, and support healthy growth and development. During the first phase (2009-2014), A&T implemented large-scale social and behavior change communication interventions across Bangladesh, Ethiopia, and Vietnam. Strategies included interpersonal communication (IPC) and promoting nutrition-sensitive agricultural activities (AG), resulting in significant improvements in IYCF practices. In the second phase (2015-2017), the initiative focused on Ethiopia, aligning with the country's National Nutrition Plan to enhance IYCF practices through a multi-sectoral approach. The study concluded that implementing social and behavior change interventions via multiple platforms in Ethiopia was both practical and effective. Intensive interventions delivered through diverse channels led to notable improvements in complementary feeding practices and a reduction in child stunting within two years. (Kim, Nguyen et al., 2019).

Additionally, a cross-sectional study conducted in the Philippines examined dietary habits in 200 households with children aged 2 to 5 years. The findings indicated that children from households with home gardens had a significantly higher likelihood of consuming vegetables. Moreover, these children exhibited higher dietary diversity scores compared to those from households without gardens. (Cabalda et al., 2011)

The project *Improving Market Linkages for Smallholder Farmers (MALIS)* in Cambodia introduced two key interventions—Agriculture Intervention and Nutrition Education Intervention—to assess their impact on Infant and Young Child Feeding (IYCF) practices and dietary diversity among children aged 0-23 months.

The Agriculture Intervention comprised Farmer Field Schools (which included field days and family nutrition sessions), agricultural fairs, and farmer business schools. Additionally, participants received vouchers to purchase farm or kitchen necessities such as fertilizers, seeds, and tools.

The Nutrition Education Intervention followed a *Training of Trainers* (ToT) approach, where community nutrition promoters (CNPs) were trained using national nutrition education materials and facilitator guides. The intervention included TIP-based cooking demonstrations, sharing meetings between trainers and participants, educational posters, soap, and kitchen equipment. Trained CNPs, along with local NGO workers, conducted seven nutrition education sessions lasting 2-4 hours weekly or biweekly.

The study observed that children from both intervention groups had improved Minimum Dietary Diversity (MDD), Minimum Meal Frequency (MMF), and Minimum Acceptable Diet (MAD). An increase in the consumption of pro-vitamin A-rich foods, fruits, and vegetables was reported. The study also found a significant association between household dietary diversity and child dietary diversity ($p=0.011$). Additionally, maternal education was positively linked to improved child dietary diversity. (Reinbott et al., 2016)

A *Behavior Change* approach was implemented in four countries—Bangladesh, Malawi, Peru, and Zambia—to enhance complementary feeding practices among children.

- **Bangladesh:** Baseline findings revealed low complementary feeding (CF) indicators, poor appetite among children, gaps in maternal knowledge, and inadequate training among frontline health workers. The intervention phase involved BRAC community health workers and volunteers conducting home visits, mass media campaigns (TV), community mobilization, and doctor-led orientations.
- **Malawi:** Initial research indicated low dietary diversity, poor meal frequency, early food introduction, and poor hygiene practices. Seasonal food shortages and the practice of children sharing family plates rather than having separate meals were also identified. The intervention included training agricultural extension workers through farm schools and model farms, involvement of Ministry of Health (MOH) nutrition workers (CNPs), and distribution of printed recipe books.

- **Peru:** The baseline survey highlighted feeding difficulties, thin food consistency, inadequate micronutrient intake, inconsistent counseling in health services, and a lack of coordination among healthcare personnel. The intervention focused on developing educational messages, job aids, printed recipe flyers, and food preparation demonstrations. Health workers integrated IYCF counseling into three primary child health services—well-child checkups, sick-child visits, and nutrition services—emphasizing preventive care.
- **Zambia:** Findings showed low household and child dietary diversity, limited production of micronutrient-rich foods, and a strong link between gender empowerment and child nutrition. Most families had access to health and agricultural services but did not fully utilize them. The intervention involved agricultural extension training at model farm schools and group-based education. (Sanghvi et al., 2017)

6. Developing Nutri Smart Village and its impact

The Nutri-Smart Village Programme has been implemented in various regions to combat malnutrition and improve nutritional awareness. The Nutrition Smart Villages project was carried out for 24 months in target villages in India and Bangladesh from September 2018 to August 2020. An important lesson learned from this programme is that increased knowledge can only translate into new behaviours in the context of an enabling environment including access to water, livelihood opportunities within the village, access to markets, improved infrastructure and the improved delivery of government services and good governance.

A study by Vishakha Bansal et al. (June 2023) assessed the nutritional status, health, and hygiene practices of farm women in five villages of Udaipur, Madar, Thoor, Brahmano ki Hunder, Feniyon ka Guda, and Loyra. The findings revealed that 57.07% of the respondents followed poor health and hygiene practices, and the majority of the rural women were vegetarians. In terms of nutritional status, 40.53% of the women were pre-obese, while 18.12% were classified as obese, highlighting the need for increased awareness regarding proper nutrition to address obesity and malnutrition.

Another initiative under the Nutri-Smart Village Programme was undertaken in the tribal districts of Odisha, including Gajapati, Kalahandi, Kandhamal, Koraput, Rayagada, Malkangiri, and Nuapada. The intervention led to notable improvements in both nutrition and income generation. Vegetable yields increased by 77%, ensuring adequate household

consumption along with surplus for sale. The introduction of dual-purpose poultry birds improved protein intake and household earnings, while the cultivation of protein-rich crops like grain amaranth and quality protein maize played a crucial role in addressing malnutrition. Additionally, home gardens with diverse fruits and vegetables helped combat micronutrient deficiencies across all age groups. Women's Self-Help Groups actively participated in value-addition activities, such as mango RTS (Ready-to-Serve) production, which not only provided nutritional benefits but also helped mitigate seasonal market fluctuations. These collective interventions enhanced community engagement, improved nutritional security, and increased incomes, making the Nutri-Smart Village approach an effective model for rural development and malnutrition alleviation.

A study conducted by Gayatri Verma Rawal et al. (March 2024) in Shajapur district, Madhya Pradesh, demonstrated the effectiveness of kitchen gardening in enhancing nutrition and income among rural households. The Krishi Vigyan Kendra (KVK) Shajapur provided training on kitchen gardening, value addition, and balanced diets, leading to an 80% increase in vegetable yields and a 21% rise in per capita vegetable consumption. Household vegetable intake improved from 39.1% to 45.14% of the Recommended Dietary Allowances (RDA), while nutrient intake also saw significant improvements energy by 13.17%, protein by 5.54%, iron by 10.93%, and calcium by 16.17%. Additionally, families earned an extra ₹1200–1500 per month from surplus produce, demonstrating how localized interventions can simultaneously combat malnutrition and enhance economic security.

The Nutri-Smart Village program in tribal districts of Odisha showcased significant improvements in nutrition and income. Vegetable yields increased by 77%, dual-purpose poultry improved protein intake, and cultivation of crops like amaranth and maize helped combat malnutrition. This integrated approach successfully addressed micronutrient deficiencies and enhanced community engagement across several districts (Gajapati, Kalahandi, etc.).

A similar initiative focusing on food diversification was implemented in Sihoda village, Jabalpur, Madhya Pradesh, to address declining pulse consumption among children (Neelu Vishwakarma et al., 2021). During 2016-18, the program introduced mixed pulse recipes, collaborated with Anganwadi centers, and conducted training and awareness programs. Pre- and post-intervention data revealed a significant improvement in pulse consumption frequency and diversity, with 76% of children preferring pulse-based foods, particularly

lentils, black gram, and green gram. This study demonstrated how targeted nutritional interventions can effectively enhance dietary habits in rural communities. Summary of intervention for development NSV is presented in Table 2.2

Table 2.4 Intervention towards developing Nutri Smart Village

Researcher	Place	Intervention	Findings
Dr. Prerna Kapila & Dr. Parvinder Singh	Mallu Nangal Village, Harsha Chinna Block, Amritsar District, Punjab	• Nutri-Smart Village concept by KVK Amritsar • Promotion of nutrition gardens Cluster demonstrations for pulses & oilseeds • Training in fruit preservation, organic farming, hygienic milk production • Encouragement of beekeeping, poultry, mushroom farming	• Deficit in production of fruits (54%), pulses (69%), milk (14%) • Increased household vegetable and fruit production • Improved protein availability through pulses & oilseeds • Dairy farming improved milk supply • Honey production introduced as an income source • Household income increased by ₹25,000/year
Dr. Vipin Kumar Rampal	Sidhuwal Village, Fatehgarh Sahib, Punjab	• Nutri-Smart Village Model under NICRA project • Fortified cereals, pulses, oilseeds, chemical-free vegetables/fruits Vegetable gardens, crop rotation model • Fruit fly traps to reduce infestation • Mushroom cultivation training • Improved milk production via mineral mix & supplements • Poly silage bags for fodder storage • California Mastitis Test (CMT) kits for dairy animals • Training women in fruit & vegetable preservation • Nutrition awareness programs for women/children	• Cereal production ↑ 3-5% • Pulses & oilseeds met household needs • 300 kg vegetables/family annually • Fruit fly trap reduced infestation by 70%, yield increase 25% • 50% of women adopted mushroom farming, earning ₹3,000-4,000/month • Milk production increase 8-10% • Mastitis-free village • Women-led small-scale businesses in pickles & jams
Dr. Rachana Singla	Kheri Mania Village, Patiala, Punjab	• 50 Nutri-Smart gardens established • Mushroom cultivation in 25 families Nutritional literacy programs • Supply of mineral mixtures, fruit plants, oilseed, and pulse seeds • Backyard poultry farming	• 298 kg vegetables/family/year • Milk availability: 310.9 ml/person/day • Mushroom intake: 32.45g/person/day Pulses: 72.88 kg/year/family • ₹45,000 per family from surplus sales

		• Crop diversification with pulses & oilseeds • Improved dairy farming	• Dietary diversity improved • Pulses increase 29.56%, oilseeds increase 43.65% • Poultry increased protein intake • Surplus shared with landless families & Gurudwara Langar • Empowered women & youth
Dr. Nirmal Singh & Dr. Balwinder Singh	Nabipur, Patti Tehsil, Tarn Taran District, Punjab	• NARI project to improve nutritional intake • Biofortified wheat (PBW1 Zn) cultivation • Seasonal pulse (moong, gram) cultivation • Kitchen gardening model (6×6 m) • Fruit tree plantation (pear, kinnow, lemon, guava) • Improved dairy farming (mineral mix, uromin lick) • Backyard poultry & goat rearing	• Vegetable production ↑ 20.22% • Milk yield ↑ 14.30% • Increased dietary diversity • Kitchen gardening & biofortified wheat adoption • Landless farmers benefited from poultry farming
Dr. Pankaj Sood, Dr. Kavita, Dr. D.S. Yadav & Dr. L.K. Sharma	Plauhata Village, Sundernagar, Mandi District, Himachal Pradesh	• High-yield, disease-resistant cereals (14.7% yield increase) • Pulses & oilseeds cultivation (pulses ↑ 17.2%, oilseeds ↑ 38.8%) • 10 Nutri-Gardens & seasonal vegetable kits • Fruit plantation (citrus, pomegranate, strawberry) • Dairy farming improvements • Backyard poultry & goat farming • Mushroom farming training (15 families)	• Fruits & vegetables deficit ↓ from 63.07 g/day to a surplus of 163.5 g/day • Milk: 309.9 ml/person/day (meets RDA) • Women & children had better nutritional security • Additional earnings: ₹90,000/family/year • Replicable model for other villages
Dr. Neetu Sharma & Dr. Sanjay Sharma	Abdullapur, Kangra District, Himachal Pradesh	• Nutri-Smart Village concept • 38 Nutri-Gardens (810 m² total) • Seed kits for improved vegetable varieties • Mushroom cultivation • Improved paddy & wheat varieties (11-13% higher yield) • Local value-added food production • Pulses & oilseeds promoted • Dairy intervention (mineral mix, UMB) • Backyard poultry (64 chicks)	• Increased dietary diversity • Rs. 59,885 from vegetable sales • Rs. 2,800 per family from poultry • Rs. 3,000 per family from mushroom sales • Rural livelihoods strengthened • Improved nutrition access & malnutrition reduction

Further expanding the Nutri-Smart Village approach, a study by Dr. Jyoti Nayak et al. (2024) explored grassroots-level nutritional interventions in 10 villages of Odisha, aligning with Poshan Abhiyan. The project emphasized Nutri-gardens, mushroom cultivation, and poultry rearing as core strategies. A survey of 300 respondents highlighted the role of mass media, social media, and community outreach in enhancing nutrition awareness, with education and media exposure playing a crucial role in behavioral change among farm women.

The Nutri-Smart Village model integrates agriculture, nutrition, and health to create sustainable solutions for food security. A study by Nambiar and Patel (2024) in Dabhoi block, Gujarat, examined food and nutrition security among marginal farm households. The study highlighted that despite several government programs, farmers continued to struggle with nutrition security, necessitating innovative approaches to agricultural support and social security. Similarly, Nambiar and Vijay (2024) compared rural Rajasthan villages with saline versus irrigable groundwater, revealing that better water access led to higher agricultural productivity and improved nutritional outcomes. These findings emphasize the need for holistic interventions combining agricultural sustainability, social security, and nutrition education to develop Nutri-Smart Villages.

A study by Hemangini Gandhi and Mousami (July 2020) assessed knowledge gaps in health and nutrition among pregnant women in Anand and Vadodara districts. The findings indicated that only 50% of the participants were aware of a healthy diet. A notable difference was observed in the awareness of correct weight gain during pregnancy, with 74% of mothers in Anand demonstrating knowledge compared to only 47% in Vadodara. Additionally, 90% of Anand mothers recognized the importance of colostrum feeding, while only 71% in Vadodara were aware of its benefits. However, awareness regarding anemia and contraceptive methods remained low in both groups. The study emphasized the need for continuous reinforcement of health and nutrition education to improve maternal and child health outcomes under government programs. The data was collected from four Primary Health Centers (PHCs) in the Vadodara rural block and one PHC in the Anklav block of Anand district.

Another study by Hemangini Gandhi and Halak Mehta (April 2020) focused on assessing dietary practices among children aged 6-23 months and promoting home-based mixed farming (HBMF) to establish Agri-Nutri (AG2N) smart communities in the tribal block of

Narmada district. This intervention utilized Nutri-kitchen gardens and community-based events led by local functionaries to convey essential nutrition messages. The study found a low prevalence of minimum acceptable diets, inadequate dietary diversity, and insufficient consumption of protective foods among infants and young children. Furthermore, the rates of stunting, wasting, and underweight in the Dediyapada block exceeded the national data reported by the Comprehensive National Nutrition Survey (CNNS). To ensure sustainability, the study stressed the importance of periodic sensitization and supportive supervision of grassroots functionaries to effectively deliver key health and nutrition messages. These findings highlight the urgent need for targeted interventions to enhance nutritional practices and improve health outcomes in rural and tribal communities.

METHODOLOGY

METHODOLOGY

Malnutrition remains one of the most critical public health challenges in India, affecting millions across both urban and rural populations. Despite economic growth and various government initiatives, malnutrition continues to hinder individual well-being and national progress. Its impact extends beyond health, affecting education, productivity, economic growth, and even future generations. This complex issue is driven by multiple factors, including poverty, inadequate healthcare, poor dietary habits, lack of nutrition awareness, and socio-economic inequalities.

Infants and young children, in particular, are highly vulnerable due to their increased nutritional requirements for growth and development. Insufficient dietary intake during early childhood not only leads to severe health complications but also causes irreversible consequences that persist throughout life. Malnutrition in this critical phase significantly increases the risk of disease and mortality.

To combat this, the concept of a Nutrition-Smart Village (NSV) has emerged as a holistic approach that integrates nutrition-sensitive and nutrition-specific interventions at the community level.

BOARD OBJECTIVE OF THE STUDY

To assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under “Nutri-Smart-Village”.

SPECIFIC OBJECTIVES OF THE STUDY

- To assess the profile and knowledge of representative of village institution/committee about nutrition and government schemes about maternal and child health
- To assess the nutritional status, dietary diversity, IYCN and WASH (Water, Sanitation, and Hygiene) practices among mothers of children aged 6 to 24 months
- To evaluate the nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children
- To sensitize representatives of village institutions to develop action plan for their village/villages towards NSV

- To monitor the execution of action plan by village institutions towards developing NSV

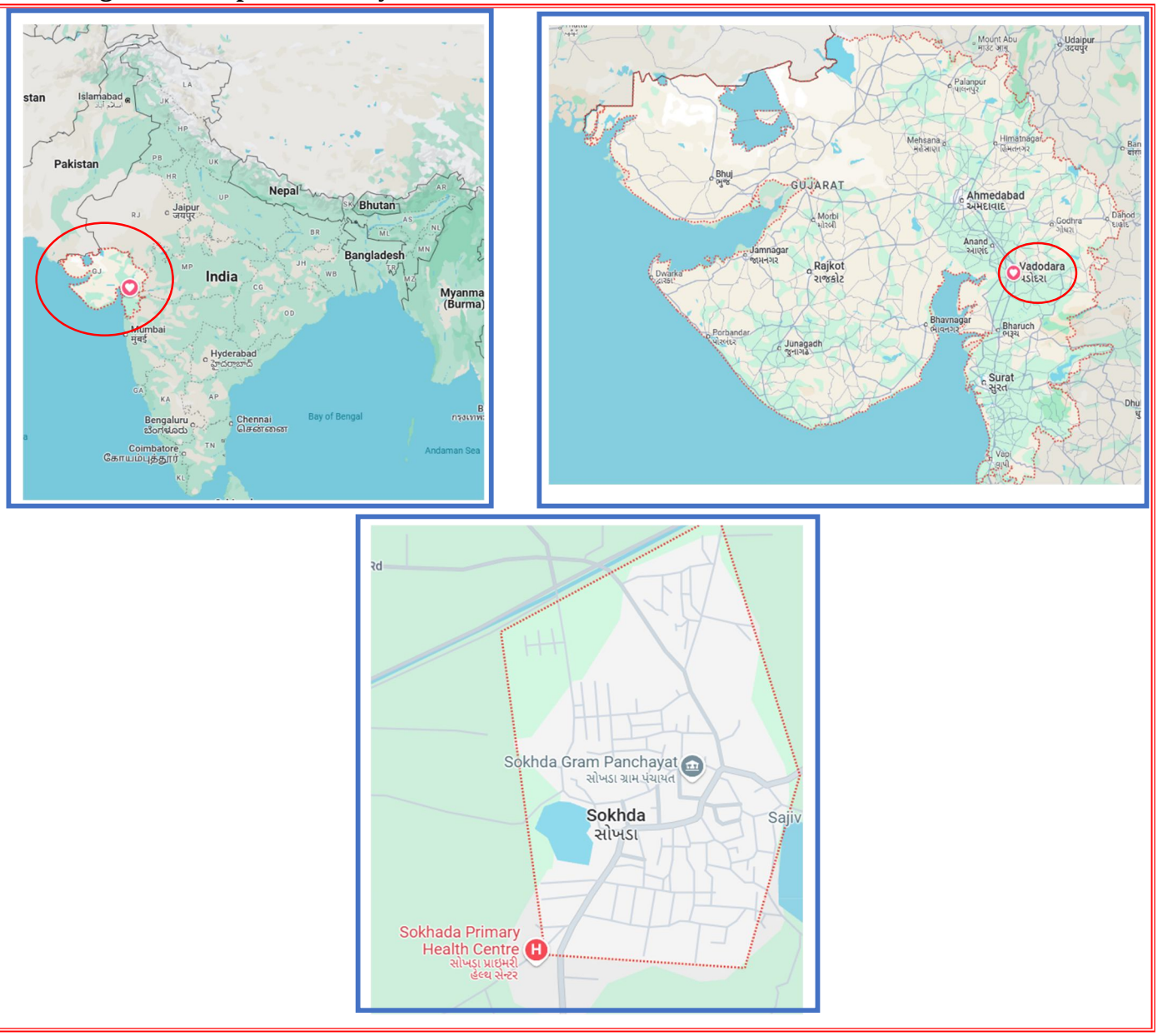
ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee for Human Reasearch (IECHR), Faculty of Family and Community Sciences, Maharaja Sayajirao University of Baroda. The ethical approval number is IECHR/FCSc/M.Sc./10/2024/40

STUDY SITE

The study was carried out in the selected village (Sokhda) of the rural block of the Vadodara. The study site is presented in Figure 3.1

Figure 3.1 Map of the study site



About the district Vadodara

Vadodara district, also known as Baroda district, is situated in the eastern part of the state of Gujarat in western India. The administrative headquarters of the district is the city of Vadodara. The district covers an area of 7,794 km² and had a population of 4,165,626 as of 2011.

Vadodara district consists of eight blocks, out of which the Rural Vadodara block was purposively chosen. This block has eight PHC villages, and one PHC village was randomly selected for the study. Permission for the study was obtained from the concerned authorities.

The study was divided into three phases. Experimental design is presented in Figure 3.3

Phase 1: Situational Analysis

Phase 2: Training and sensitization of Village Institutions

Phase 3: Monitoring the Enabling Environment Towards NSV

PHASE 1:

SITUATIONAL ANALYSIS

1. **Registering local village institutions**

a) Local village institutions were registered, including:

- Gram Sanjivni
- Kisan Group
- Pani Samiti
- PRI Members
- Dairy Cooperative
- Primary School
- Health and ICDS staff - ASHA, Anganwadi worker, ANM, PHC MO
- RKSK peer educator
- SHG representative/Social action committee representative

b) The profile and knowledge of selected local village institution representatives were assessed.

- Two active members from each institution were approached for data collection. In the case of health-related institutions such as Anganwadi centers, all relevant workers, including ASHAs, ANMs, and Anganwadi workers, were included in the analysis.
- Pre-tested semi-structured questionnaires were used to elicit the knowledge of the representatives. (APPENDIX IV)
- The profile and knowledge on following topics were gathered

General information

- Socio economic status
- Education qualification
- Designation in village institution and their role
- Training regarding health, nutrition or community development

Nutrition and health related topics

- Infant young child nutrition
- Anemia
- WASH practices
- Nutrition and diet
- Services of various National programs (ICDS, PDS, PM- POSHAN and Ayushman Bharat-PM JAY)
- Nutri Smart Village concept

2. Assessment of nutritional status and MDD, MMF and MAD of children aged 6 to 24 months

a) Mothers of children aged 6 to 24 months residing in the selected village were enrolled for the study.

Infant and young children (6 to 24 month) living in the selected village with mothers were enrolled in the study. Permission was obtained from ICDS office to contact AWCs in selected village. From Anganwadi centers, list of the registered children aged 6 to 24 months was obtained. The mothers of this children who consented and were available during the data collection process were enrolled in the study.

In this study 7 Anganwadi center of village Sokhda were enrolled. All the children aged between 6 to 24 months who were registered in the Anganwadi centers were enrolled in the study. In all 87 mothers of children (6 to 24 months) were interviewed.

b) A pre-tested semi-structured questionnaire was used. Data on sociodemographic profile, anthropometric measurements, knowledge regarding IYCN and WASH practices and utilization of Annaprasan diwas and compliance of Bal Shakti, complementary feeding was obtained. Data on both quality and quantity of food given was elicited through 24-hour dietary recall to asses MMF, MDD, MAD (minimum meal frequency, minimum dietary diversity and minimum adequate diet) (APPENDIX IV)

- **Dietary Practices**

- MMF, MDD and MAD of children was assessed to determine if they were receiving adequate nutrition. The main tool for this assessment was a 24-hour dietary recall, where mothers were asked to recall all the foods and beverages their children consumed in the previous 24 hours.
- Using the FANTA-USAID 2016 publication.

❖ **Minimum dietary diversity 6–23 months (MDD)** (FANTA USAID,2016)

MDD is the proportion of children 6-23 months of age who receive foods from 4 or more food groups.

Children aged 6-23 months who obtained foods from ≥ 4 food groups during the previous day. (FANTA USAID, 20164)

Based on seven food groups Minimum Dietary Diversity is calculated:

- Grains, roots, and tubers
- Legumes and nuts
- Dairy products (milk, yogurt, cheese)
- Flesh foods (fish, poultry, meat, and liver/organ meats)
- Eggs
- Vitamin A-rich fruits and vegetables
- Other fruits and vegetables

It is a proxy measure for dietary quality of complementary feeding (micronutrient adequacy of diet), and also food group diversity is positively associated with micronutrient adequacy of the diet.

- **Minimum meal frequency 6–23 months (MMF)** (FANTA USAID,2016)

The percentage of breastfed and non-breastfed children aged 6-23 months, who receive solid, semi-solid, or soft foods also including milk feeds for non-breastfed children the minimum number of times or more. This indicator calculated from the following two fractions:

Breastfed children aged 6-23 months who received solid, semi-solid or soft foods the minimum number of times or more during the prior day

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Breastfed children 6-23 months of age

And

Non-breastfed children aged 6-23 months who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the prior day

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Non-breastfed children 6-23 months of age

- **Minimum adequate diet 6–23 months (MAD)** (FANTA USAID,2016)

MAD combines indicators of dietary diversity and meal frequency to assess the quantity and quality of infant and young child feeding.

The indicator is calculated from the following two fractions:

Breastfed children aged 6-23 months who had at least the minimum dietary diversity and the minimum meal frequency during the prior day

---

Breastfed children 6-23 months of age

And

Non-breastfed children aged 6-23 months of who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the prior day

---

Non-breastfed children 6-23 months of age

Procedure

From one day dietary recall, a list of food groups consumed by the children, out of the above mentioned seven food groups along with breastfeeding, packed foods, Balshakti and iron-rich foods was prepared, and MDD was computed. The percentage was then made according to the consumption response.

- **Age appropriate IYCF practices (Indian Academy of Pediatrics (IAP) – IYCF Guidelines)**

Table 3.1 Age appropriate IYCF practices for children aged 6 to 24 months

Age	Texture	Frequency	Average amount per meal
6-8 months	Start with thick porridge, well mashed foods	2-3 meals per day plus frequent breastfeeding	Start with 2-3 tablespoonfuls
9-11 months	Finely chopped or mashed foods, and foods baby can pick up	3-4 meals per day plus breastfeeding. Offer 1-2 snacks depending on appetite	½ of a 250 mL cup/bowl
12-23 months	Family foods, chopped or mashed if necessary	3-4 meals per day plus breastfeeding. Offer 1-2 snacks depending on appetite	¾ to 1 cup/bowl (250 mL)

The Table 3.1 provides a guide for feeding babies from 6 to 23 months, detailing the appropriate food texture, feeding frequency, and portion sizes at each stage. At 6-8 months, babies should start with thick porridge or well-mashed foods, having 2-3 solid meals a day in addition to frequent breastfeeding. The amount per meal should be around 2-3 tablespoonfuls. At 9-11 months, babies can handle finely chopped or mashed foods, as well as finger foods they can pick up themselves. They should have 3-4 meals a day, plus

breastfeeding, with 1-2 snacks depending on their appetite. The meal portion increases to about half of a 250 mL cup or bowl. By 12-23 months, babies can begin eating family foods, chopped or mashed if needed, and should have 3-4 meals a day along with breastfeeding. Snacks can still be offered 1-2 times. The meal portion increases further to ¾ to 1 full 250 mL cup or bowl. This progression supports the baby's growing ability to chew and eat more solid foods while continuing to breastfeed for nutritional support.

- **WASH practices**
  - The study will also investigate mothers' **WASH practices**, which directly impact child health and nutrition. The following areas were explored:

    - **Handwashing practices**: Whether mothers wash their hands with soap before preparing food and feeding their children, and after using the toilet
    - **Cleanliness and hygiene practices**: General household hygiene, cleanliness of cooking utensils, and food storage practices
    - **Access to safe water**: Source of drinking water and its quality (e.g., boiled, filtered, or untreated water)

- **Anthropometric measurements**

Data on child's age, gender, birth order, was collected anthropometric measurements such as child's length, weight and birth weight were taken to assess the nutritional status of the index child. Nutritional status was assessed using WHO growth standard for all the 3 indicators like wasting, stunting and underweight.

- **Length/ height measurement**

Depending on a child's age and ability to stand, measure the child's length or height. A child's length is measured lying down (recumbent). Height is measured standing upright If a child is less than 2 years old, measure recumbent length. If the child is aged 2 years or older and able to stand, measure standing height.

Procedure for Length

Infants' length was measured using an infantometer (<85cm child). It consists of the fixed headboard and movable foot piece. Before placing an infantometer on the firm flat surface, it was clean to disinfectant. The child's length was taken with minimal

clothing and no footwear/ socks/ any hair ornaments. Reading observed nearest to 0.1 cm.

Procedure for Height

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

- **Weight measurement**

Weight is a significant anthropometric indicator of body mass. It is a sensitive predictor of malnutrition and can be used to estimate an individual's nutritional status. Procedure A Salter weighing (spring hanging) scale, periodically calibrated, had been used to take the weight of the children. It is portable and used conveniently in the field. The children were placed in the trouser and hung erect on the scale without touching anything with minimal clothing or footwear and looking straight ahead. The scale adjusted to zero before each measurement. The weight reading recorded to the nearest 0.1 kg (100g).

- **Nutritional status as per the WHO growth standard**

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

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

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

❖ **ICDS service utilization**

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

❖ **Practices of children (6-23 months)**

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

- Initiation of breastfeeding
- Exclusive breastfeeding
- Continuation of breastfeeding
- Initiation of complementary feeding
- Care and WASH practices
- Utilization of balshakti

- Consumption of food groups
- Frequency and Quantity of complementary feeding

❖ **Dietary information**

Data on dietary practices of children was taken through 24-hour dietary recall method. Dietary quantity and quality of food consumed by the children were collected using standard spoon and cups.

Complementary feeding indicators

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

Table 3.3: - Infant and young child feeding indicators

Sr. no.	Indicator	Definition
BREASTFEEDING INDICATORS		
1	Ever breastfed	percentage of children born in the last 24 months who were ever breastfed
2	Early initiation of breastfeeding	percentage of children born in the last 24 months who were put to the breast within one hour of birth.
3	Continued breastfeeding 12-23 months	percentage of children 12-23 months of age who were fed breast milk during the previous day.
COMPLEMENTARY FEEDING INDICATORS		
1	Age-appropriate initiation of complementary feeding	percentage of children born in the last 24 months who were initiated with complementary food at the completion of 6 months of age.
2	Complementary feeding indicators	percentage of infants 6-8 months of age who consumed solid, semisolid or soft foods during the previous day.
3	Minimum dietary diversity 6-23 months	percentage of children 6-23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day.

4	Minimum meal frequency 6-23 months	percentage of children 6-23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) at least the minimum number of times during the previous day.
5	Minimum milk feeding frequency for non-breastfed children 6- 23 months	percentage of non-breastfed children 6-23 months of age who consumed at least two milk feeds during the previous day.
6	Minimum acceptable diet 6-23 months	percentage of children 6-23 months of age who consumed a minimum acceptable diet during the previous day.
7	Egg and/or flesh food consumption 6-23 months	percentage of children 6-23 months of age who consumed egg and/or flesh food during the previous day.
8	Sweet beverage consumption 6-23 months	percentage of children 6-23 months of age who consumed a sweet beverage during the previous day.
9	Unhealthy food consumption 6-23 months	percentage of children 6-23 months of age who consumed selected sentinel unhealthy foods during the previous day.
10	Zero vegetable or fruit consumption 6-23 months	percentage of children 6-23 months of age who did not consume any vegetables or fruits during the previous day

Source:- UNICEF 2021

- **Assessment of nutrition status of primary school children**
  - All children studying in standard 6,7,8 in the primary school of selected village were enrolled
  - Anthropometric measurement was taken; height, weight. Thinness was identified through BMI for age (WHO 2007)

- **Utilization of services of selected government programs**
  - The overall health and nutrition services utilized by children in the selected village were assessed, including:

    - **Iron-Folic Acid (IFA) Supplementation**: Whether children received IFA tablets for anemia prevention
    - **Deworming**: Participation in deworming programs, which are crucial for preventing parasitic infections that affect nutritional status
    - **Health Check-ups**: Frequency of health check-ups conducted by health workers or at school health programs
    - **Mid-Day Meal (MDM) Program**: Participation in the mid-day meal scheme at school, which provides children with a nutritious meal during school hours

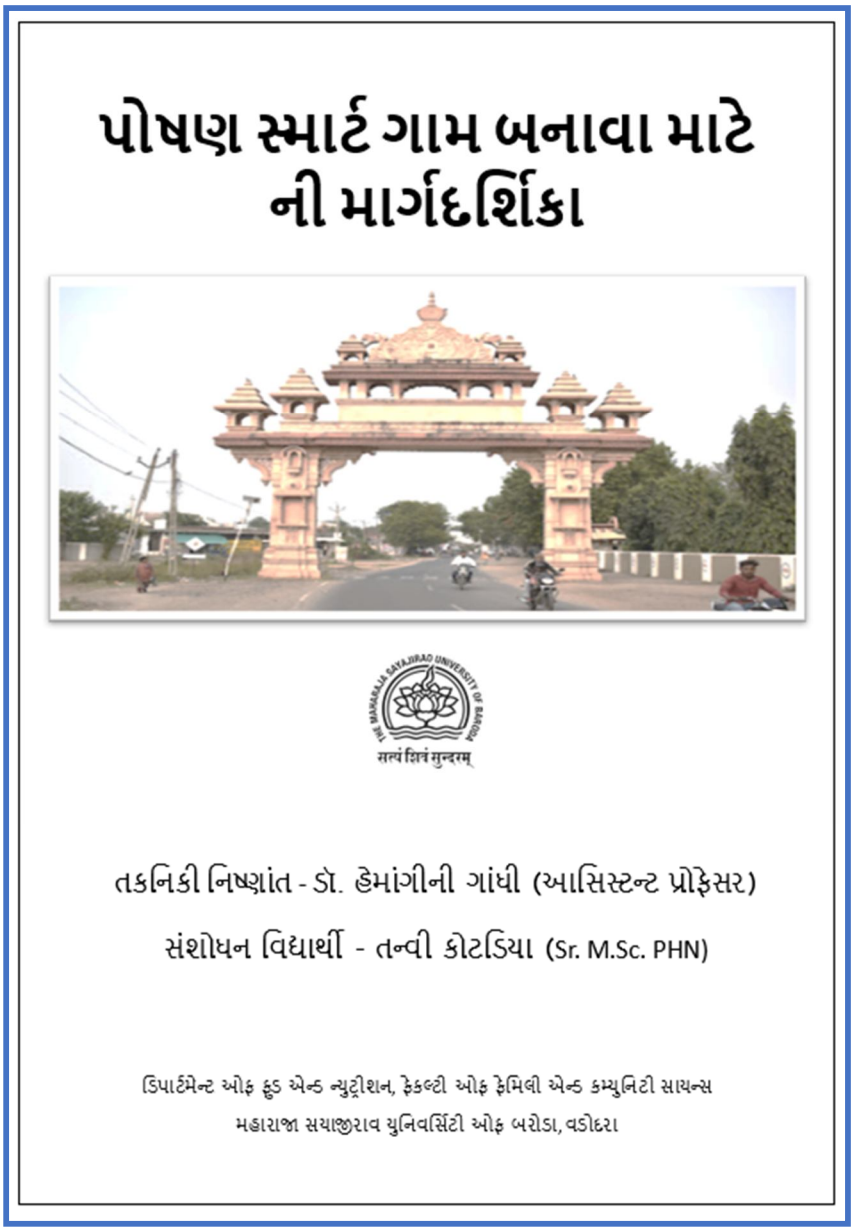
PHASE 2:

TRAINING AND SENSITIZATION OF REPRESENTATIVE OF VILLAGE INSTITUTIONS

To sensitize about NSV concept, minimum 2 representatives from all village institution were enrolled for the training.

1. A training module and relevant IEC material on NSV were compiled.

Figure 3.2 Training module on NSV



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

- Nutri Smart Village
- Balanced diet and food group
- WASH
- Anemia
- IYCN
- Malnutrition
- Government services

2. Representatives of village institutions were sensitized to develop an action plan for their villages towards NSV.
    a) The key village institution representatives identified in Phase 1 underwent sensitization. The focus was on empowering them to actively participate in the development and implementation of nutrition-sensitive action plans for their respective villages.
    b) A one-day training session was conducted. The agenda of the training is giving in the Table 3.4

3. Development of action plan.

After sensitizing the village institution representatives, a community-driven action plan was developed to promote NSV (Table 3.5). The action plan focused on 2 main areas:

a) Nutri Literacy

Nutri-capacity building aimed at enhancing awareness regarding maternal, child, and adolescent health for different vulnerable groups (pregnant and lactating mothers, mothers of young children, and adolescent girls). This was achieved through:

- Awareness/health screening camps and on Mamta diwas and suposhan samvad

b) Nutri-Environment Building

Creating a supportive environment for nutrition was key to sustainable improvements in community health. The action plan included several initiatives aimed at building a “Nutri-Environment” within the village:

- Campaigns in Schools and Anganwadi
- Rallies and Exhibitions on Nutri Literacy

- Wall Paintings and Slogans or posters
- Introducing NSV concept in Gram Sabha and Gram Sanjivni meetings

Table 3.4 - Training Agenda
Date: 24 Dec 2024
Venue: PHC, Sokhda

Activities	Time	Resources person
Refreshment and registration of representatives of village institution	10:00 am-10:30 am	
Welcome address	10:30 am- 11:00pm	Dr. Hemangini Gandhi
Objectives of the Training		
Pre test		
Tea break	11:00 am –11:20am	
Introduction of the representatives	11:20 am-12:00 pm	All participants
Distribution of handouts	12:00pm – 2:00pm	Tanvi Kotadia
Situation of the nutritional status of village children		Dr. Hemangini Gandhi, Tanvi Kotadia
Sensitization on the NSV concept		Dr. Hemangini Gandhi
Balanced diet and dietary diversity		Tanvi Kotadia
First 1000 days approach and ANC care		Dr. Hemangini Gandhi, Tanvi Kotadia
Child feeding practices		
Lunch Break	2:00pm- 2:40pm	
Anemia in vulnerable groups and its preventive measure	2:40pm- 3:40pm	Tanvi Kotadia
WASH practice		
Services of national programs under ICDS, PDS, PM POSHAN, Ayushman Bharat PM JAY		Dr. Hemangini Gandhi
Preparation of action plan and monitoring checklist to promote NSV	3:40pm – 4:20pm	Dr. Hemangini Gandhi, Tanvi Kotadia
Post test	4:20- 5:00pm	
Tea and departure		

Table 3.5- Action plan to develop Nutri Smart Village

Village institutions	Activities
Anganwadi Workers	• Organizing rallies on adolescent nutrition • Creating wall paintings to spread awareness • Conducting nutrition awareness campaigns • Recipes demonstration and competition between adolescents' girls
Schools	• Setting up Nutrition Corners • Conducting educational sessions on healthy nutrition practices • Facilitating teacher-led discussions on nutrition
Gram Sabha	• Holding village meetings focused on nutrition promotion • Integrating nutrition policies into community development plans
ASHA Workers	• Arranging health check-up camps • Conducting anemia screening to assess community health
Village Representatives / VOs / Other Organizations/ gram sanjivani	• Conducting health and nutrition counseling sessions for community members
Community Groups & Self-Help Groups (SHGs)	• Hosting discussions on household nutrition and food security
Kisan Mandlis, dudh mandli & pani samiti	• Promoting village-wide engagement in nutrition improvement initiatives
Rashtriya Kishor Swasthya Karyakram (RKSK) peer educator	• Facilitating rallies and awareness campaigns to strengthen the Nutri-Smart Village approach

PHASE 3:

MONITORING THE EXECUTION OF ACTION PLAN

In this final phase, a monitoring process was done to assess the progress of the action plan using a monitoring checklist.

- The number of activities conducted by each village institution over the eight-weeks duration, as per the action plan, was documented.
- Post-data collection included:
    - Knowledge assessment of representatives of village institutions.
    - Dietary practices of children aged 6 to 24 months.
    - Service utilization by primary school children (MDM, IFA, deworming, and health check-ups).
      (APPENDIX IV)

DATA COLLECTION PROCEDURE

A pre tested semi structured questionnaire was develop separately for the institution representative to assess profile and knowledge. For the upper primary children, the service utilization (IFA, deworming, health check-ups and MDM) was assessed. For the mothers of the children aged 6 to 24 months, the IYCN and WASH practice of mother along with the nutritional status and the dietary diversity for their child (6 to 24 month) was elecited.

INCLUSION CRITERIA

- Active members of CBOs, including Gram Sanjivni, Village Development Committee (VDC), RKSK peer educators, Kisan groups, and PRI members, SHG etc.
- Mother's Children aged 6 to 24 months who will be available during the study period
- Upper primary school children (6,7,8 standard)

EXCLUSEN CRITERIA

a) Nil

TOOLS AND TECHNIQUES

Particular	Tools
Profile of village institution representatives, knowledge of the representative of local village institutions	Pre tested semi structured questionnaire
Anthropometric measurement (height, weight, MUAC)	Standard methods
IYCN and WASH (Water, Sanitation, and Hygiene)	Pre tested semi structure questionnaire
Dietary diversity and MAD for children	1 day 24-hour dietary recall method
Service utilization (IFA, deworming, health check-ups and MDM) of primary school children	Pre tested semi structure questionnaire
Sensitize representatives of village institutions	Training module and IEC material
Monitor the execution of action plan	Monitoring checklist

Primary Outcome

1. Profile and knowledge of representative of village institution/committee about nutrition and government schemes about maternal and child health
2. Region specific nutritional status, dietary diversity of children aged 6 to 24 months
3. Region specific IYCN and WASH (Water, Sanitation, and Hygiene) practices among mothers of children aged 6 to 24 months
4. Region specific nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children

Secondary Outcomes

1. Feasibility of strengthening Village institution representative for developing NSV
2. Enabling environment and barriers towards developing NSV

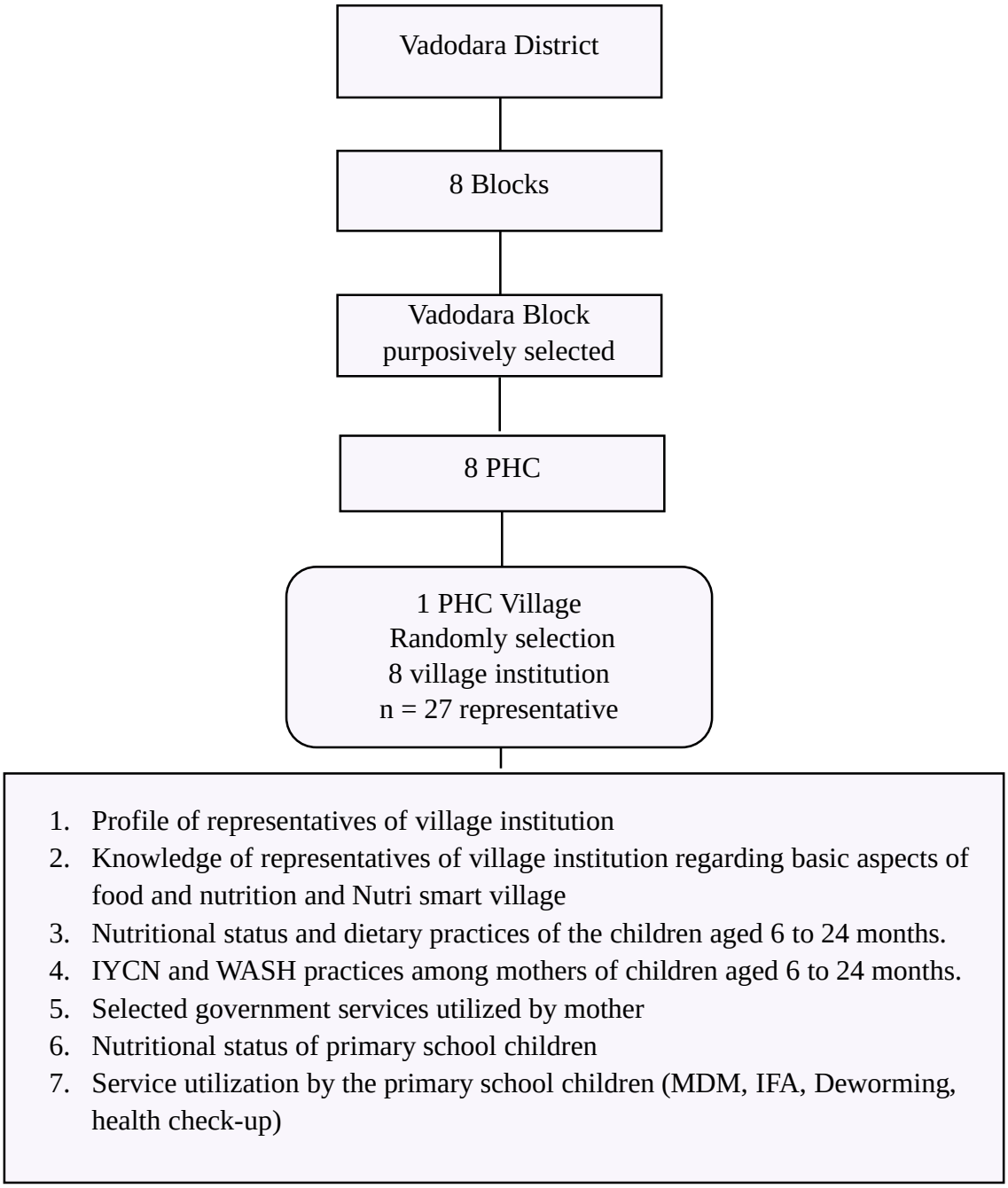
Statistical analysis

- The data collected was entered in Microsoft Excel, cleaned and then analysed
- Appropriate statistical analysis was carried out to present the findings
- Frequency distribution, mean, percentage and the graphs were prepared

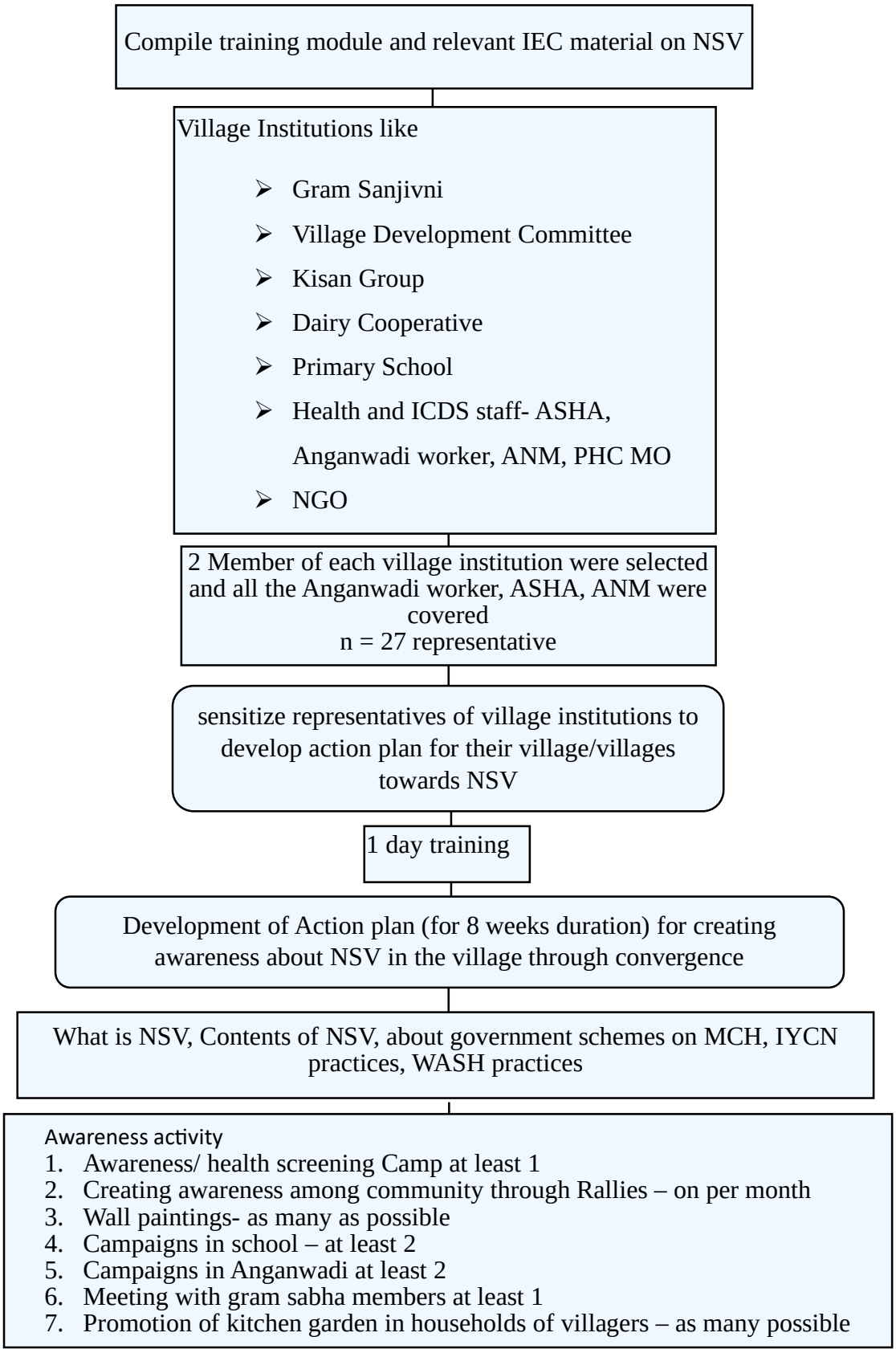
Figure 3.3

EXPERIMENTAL DESIGN

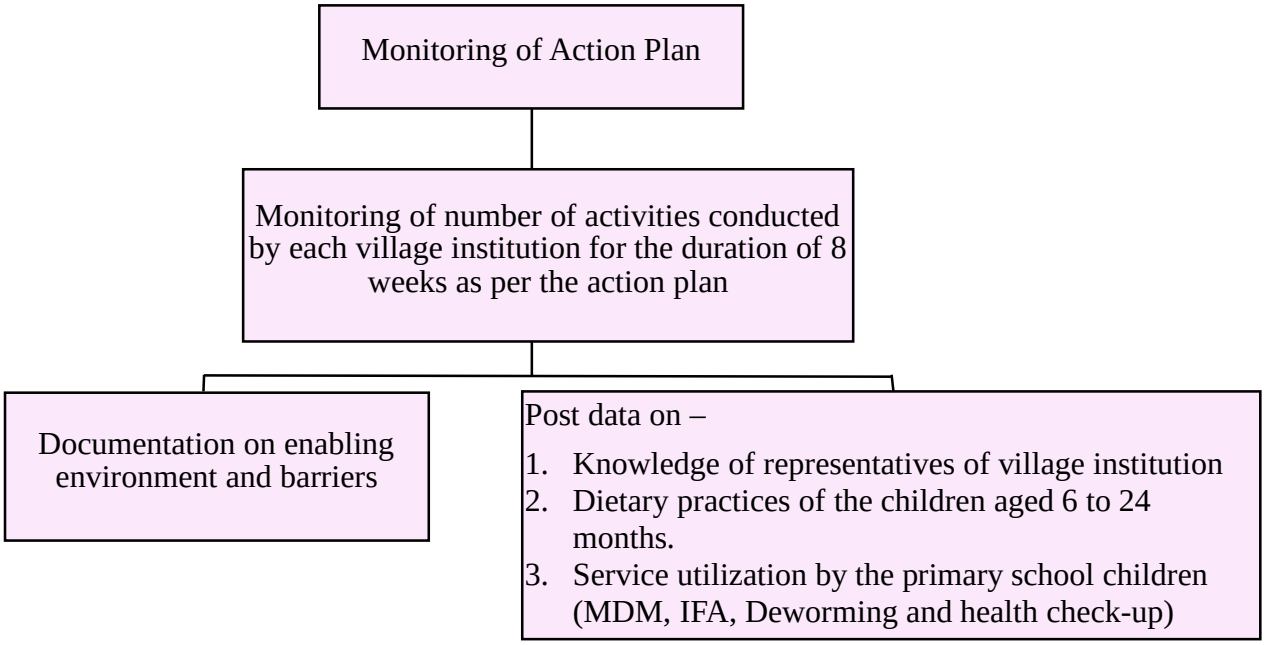
Phase 1 - Situational Analysis



Phase 2 - Training and sensitization of Village Institutions



Phase 3- Monitoring the execution of Action Plan



RESULT AND DISCUSSION

RESULT AND DISCUSSION

Malnutrition remains a public health concern in developing nations like India, with undernutrition being particularly prevalent among young children. During the first 1,000 days of life, inadequate nutrition and poor Infant and Young Child Feeding (IYCF) practices can severely impact growth and development. As a result, many children fail to reach their full physical potential, often experiencing stunted growth that persists into adulthood.

Young children are especially vulnerable due to their increased nutritional needs during this formative period. A lack of essential nutrients not only weakens their immune system but also leads to long-term health complications. If not addressed early, malnutrition can have irreversible consequences, increasing susceptibility to diseases and raising the risk of mortality.

To tackle this issue, the Nutri-Smart Village (NSV) initiative has been introduced as a holistic, community-driven solution. By integrating nutrition-sensitive and nutrition-specific interventions, this approach seeks to improve dietary habits, strengthen food security, and create sustainable nutrition-focused strategies at the grassroots level.

The present study was planned, acknowledging the above fact with a broad objective to assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under “Nutri-Smart-Village”.

The specific objectives of the study were framed as:

1. To assess the profile and knowledge of representative of village institution/committee about nutrition and government schemes about maternal and child health
2. To assess the nutritional status, dietary diversity, IYCN and WASH (Water, Sanitation, and Hygiene) practices among mothers of children aged 6 to 24 months
3. To evaluate the nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children
4. To sensitize representatives of village institutions to develop action plan for their village/villages towards NSV
5. To monitor the execution of action plan by village institutions towards developing NSV

The findings of the study are highlighted and presented into three phases as follow:

Phase 1: Situational Analysis

- **Profile of village institution representatives**
  - Demographic and Socio-Economic Profile
  - Participation in Gram Sabha Meetings and Key Discussion Topics
  - Training received on health, nutrition, and community development
- **Knowledge of representatives of village institution**
  - Knowledge regarding infant and young child feeding (IYCF) practices
  - Knowledge of representatives of village institution regarding anemia
  - Knowledge of representatives of village institution regarding WASH (water, sanitation, and hygiene)
  - Dietary knowledge of representatives of village institution
  - Knowledge of representatives of village institution regarding undernutrition
  - Knowledge and practices of village institution representatives regarding unhealthy foods
  - Knowledge of representatives of village institutions regarding selected government services
  - Understanding of the nutri smart village (NSV) concept and village development planning
- **Nutritional status and dietary practices of the children aged 6 to 24 months.**
  - Background information of the children aged 6 to 24 months
  - Anthropometric Measurements and Nutritional Status of Children Aged 6 to 24 Months
  - Dietary diversity among children aged 6 to 24 months
  - Meal Frequency, Dietary Diversity, and Adequate Diet Among Children Aged 6 to 24 Months
- **IYCN and WASH practices among mothers of children aged 6 to 24 months.**
  - Background information of mothers of children aged 6 to 24 months
  - Infant and young child feeding (IYCF) practices among mothers of children aged 6 to 24 months
  - Hygiene practices among mothers of children aged 6 to 24 months

- **Selected government services utilized by mother**

- Utilization of Integrated Child Development Services ICDS by mothers for children aged 6 to 24 months

- **Nutritional status of primary school children**
  - Demographic profile of children in standards 6 to 8
  - Anthropometric measurements of children (standards 6 to 8)
  - Nutritional status of primary school children
- **Service utilization by the primary school children (MDM, IFA, Deworming, health check-up)**

Phase 2: Training and sensitization of Village Institutions

- Development of Training Module and Handouts
- Sensitization of Village Representatives and Action Plan Development
- Monitoring

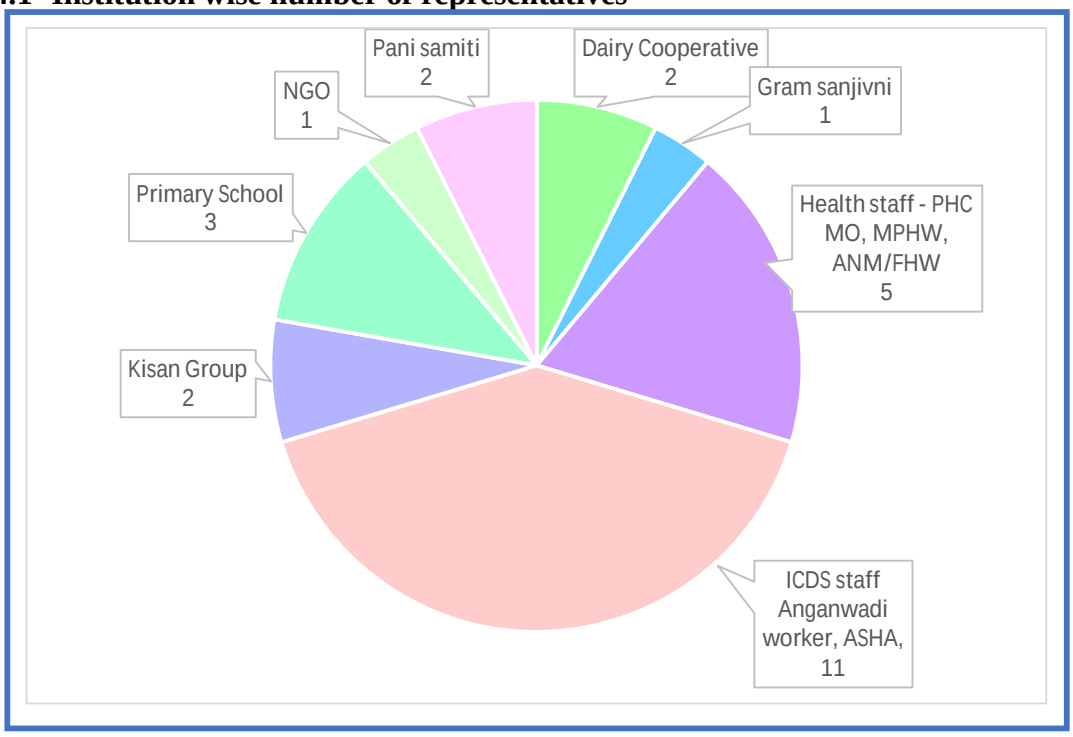
Phase 3: Monitoring the Enabling Environment and barriers towards developing NSV

- Monitored the execution of the planned activities
- Post data was collected on the following aspects
  - Knowledge of representatives of village institution
  - Dietary practices of the children aged 6 to 24 months.
  - Service utilization by the primary school children (MDM, IFA, Deworming and health check-up)

Phase I: Situational Analysis

In Vadodara district, there are a total of eight administrative blocks, out of which the Vadodara block was purposively chosen for the study. Within this block, there are eight Primary Health Centers (PHCs) villages, and one PHC village was selected randomly for further investigation. Permissions from concerned authorities were obtained. Key local institutions were identified, including the Dairy Cooperative, Health Department, Integrated Child Development Services (ICDS), Kisan Samiti, Primary School, Pani Samiti, and Non-Governmental Organizations (NGOs). Representatives from these institutions were then enlisted for participation in the study.Twenty-seven representatives were enrolled from 8 different village institution. Number of enrolled representatives is detailed in Figure 4.1.

Figure 4.1- Institution wise number of representatives



➢ **Profile of village institution representatives**

An attempt was made to collect the representatives of village institutions. Information included aspects such as age, occupation, religion, caste, economic status, marital status, participation in Gram Sabha meetings, topics discussed in these meetings, and training received on health, nutrition, and community development. The findings are shown in the Table 4.1

❖ Demographic and Socio-Economic Profile

Among the 27 representatives surveyed, 48% belonged to the 36-45 years age group, while 26% were aged 25-35, and another 26% were above 45 years. Age range (y) of the representatives was 25y to 54y. In terms of occupation, 70% were employed in government services, followed by 22% volunteer workers, and 7% engaged in farm work.

Ninty six percent of the representatives were following Hindu religion, while 4% were following Muslim religion. Caste-wise, 52% belonged to the General category, 26% were from Other Backward Classes (OBCs), 15% belonged to Scheduled Tribes (STs), and 7% were from Scheduled Castes (SCs). Ninty three percent of the representatives were above Poverty Line (APL), while 7% fell under the Below Poverty Line (BPL) category.

Table 4.1: Profile of the representatives of village institutions

Particulars		**N= 27**	**%**
Age of the representatives (y)	25-35	7	26%
	36-45	13	48%
	>45	7	26%
Age range (y)	25-54		
Mean age (y)	40±7.25		
Occupation	Government services	19	70%
	Volunteer worker	6	22%
	Farm work	2	7%
	Total	27	
Religion	Hindu	26	96%
	Muslim	1	4%
	Total	27	
Caste	General	14	52%
	SC	2	7%
	ST	4	15%
	OBC	7	26%
	Total	27	
Economic status	APL	25	93%
	BPL	2	7%
	Total	27	
Marital status	Married	25	93%
	Unmarried	2	7%
	Total	27	
Earlier Gram sabha meetings attended	Yes	24	89%
	No	3	11%
	Total	27	
Topics discussed in Gram Sabha meetings	Agriculture	18	67%
	Village development	20	74%
	Water	14	52%
	Drainage	16	59%
	Toilet	6	22%
	Bio gas	21	78%
	Health	20	74%
	Nutrition	16	59%
	Not applicable	4	15%
How many representatives received training on health, nutrition and community development	Yes	18	67%
	No	9	33%

- Participation in Gram Sabha Meetings and Key Discussion Topics

  Eighty nine percent of representatives reported that they had attended Gram Sabha meetings earlier, while 11% had never participated. The key topics discussed in those meetings included village development (74%), health (74%), biogas (78%), agriculture (67%), nutrition (59%), drainage (59%), and water issues (52%). Topics like toilet facilities (22%) received relatively lower attention. A small portion (15%) reported that they did not engage in any Gram Sabha discussions.

- Training received on health, nutrition, and community development

  Sixty seven percent of the representatives reported that training was received on essential topics like health/ nutrition/ community development.

- **Knowledge of representatives of village institution**

  Knowledge regarding infant and young child feeding (IYCF) practices

  Information was collected on knowledge of representatives of village institution regarding Infant and Young Child Feeding (IYCF) practices. The focused-on aspects such as early initiation of breastfeeding, colostrum awareness, exclusive breastfeeding, and complementary feeding. The findings are shown in the Table 4.2

  - Early initiation of breastfeeding: 78% of the representatives were aware that breastmilk should be initiated within the first hour of birth, while 22% lacked knowledge on this aspect.
  - Familiarity with colostrum: all 27 representatives (100%) were familiar with the term colostrum. However, when asked about its importance, 78% correctly stated that colostrum helps protect against infections by strengthening immunity, whereas 22% were unaware of its benefits.
  - Exclusive breastfeeding: when questioned about the recommended duration of exclusive breastfeeding, 70% correctly identified it as six months, while 4% believed it should continue for nine months. A notable 19% were unaware of the correct duration.
  - Introduction of complementary feeding: 74% correctly stated that complementary feeding should begin after the completion of six months, while 15% answered six months, and 11% were unsure.

Table 4.2 - Knowledge of representative of village institution regarding Infant Young Child Feeding Practices

Particulars		N = 27	%
Early initiation of the breastmilk	With in 1 hr	21	78%
	Don’t know	6	22%
Familiar to term Colostrum	Yes	27	100%
Importance of colostrum	Fights against antibodies/foreign bodies entering inside the body and makes the system immune	21	78%
	Don’t know	6	22%
Period of exclusive breastfeeding	6 months	19	70%
	9 months	1	4%
	Don’t know	5	19%
Correct age of initiation of Complementary feeds	6 months	4	15%
	After competition of 6 months	20	74%
	Don’t’ know	3	11%
Period of complementary feeding, along with breastfeeding	6 months	4	15%
	1 year	1	4%
	2 years	20	74%
	Don’t know	2	7%

- Continued breastfeeding along with complementary feeding: about 74% correctly identified that breastfeeding should continue up to two years alongside complementary feeding, whereas 15% believed it should continue for only six months, 4% stated one year, and 7% were unaware of the recommended practice.

Knowledge of representatives of village institution regarding anemia

- Awareness level regarding anemia- a major public health problem was assessed including its causes, symptoms, preventive measures, dietary sources of iron, and the distribution of Iron-Folic Acid (IFA) supplements. The findings provide insight into their level of awareness and areas where further education may be needed. The findings are shown in the Table 4.3
- All 27 representatives (100%) were familiar with the term anemia, indicating a strong baseline awareness.
- Ninty six percent correctly identified inadequate consumption of iron-rich foods as a primary cause. However, only 33% were aware that consuming iron-rich foods with inhibitors such as tea and coffee reduce iron absorption. Other causes recognized included hookworm infestations (41%), frequent malaria episodes (33%), and excessive blood loss due to menstruation, delivery, or hemorrhage (22%). Awareness about blood loss due to accidents (7%) was notably low, and one respondent was unaware of the causes altogether.
- Regarding symptoms, a majority of participants recognized fatigue (78%), weakness (81%), and pallor of the skin, tongue, and nails (78%) as common signs of anemia. Dizziness (74%) and brittle or spoon-shaped nails (44%) were also mentioned, but awareness of less common symptoms such as fast, irregular heartbeat (11%) and tingling sensations in the legs (19%) was lower.
- Preventive measures were well understood, with 93% recognizing the importance of consuming iron-rich foods along with enhancers such as Vitamin C-rich foods and dietary diversity. The same percentage acknowledged the role of iron-folic acid (IFA) tablets in preventing anemia. However, knowledge of other preventive strategies, such as malaria prevention (11%), household cleanliness (19%), and deworming with Albendazole tablets twice a year (15%), was significantly lower.
- Regarding iron-rich food sources, most participants identified green leafy vegetables (93%), dates (93%), beetroot (85%), and jaggery (85%) as key sources. However, awareness of other sources like whole cereals and pulses (52%) and soybean (11%) was relatively lower. A good percentage (70%) knew that Vitamin C-rich foods such as

amla, lemon, and orange should be consumed with iron-rich foods to enhance absorption. However, only 48% were aware that tea and coffee should be avoided with iron-rich meals, and 37% knew that milk and dairy products could inhibit iron absorption.

- Participants demonstrated high awareness regarding the beneficiaries of IFA tablets, with 100% correctly identifying pregnant mothers and adolescent girls, while recognition for lactating mothers (89%), children under six years (81%), and women of reproductive age (70%) was slightly lower. ASHA workers were correctly identified as the primary providers of IFA tablets by all participants (100%), whereas fewer recognized ANMs (33%), AWWs (7%), and FHWs (26%) as providers.

Knowledge of representatives of village institution regarding WASH (water, sanitation, and hygiene)

- Information regarding hygiene was collected. The findings provide insight into the level of awareness and adherence to recommended hygiene practices. The findings are shown in the Table 4.4
- Almost all the representatives (96%) reported having tap water available inside their homes for drinking water.
- All representatives (100%) were aware of the importance of handwashing after using the toilet and before cooking, highlighting strong knowledge of critical hygiene moments. Additionally, 85% recognized the need to wash hands after handling children, and 59% practiced handwashing after handling cattle, which is essential for preventing zoonotic infections. However, only 41% acknowledged the importance of washing hands before eating, indicating a gap in knowledge regarding food-related hygiene.
- All respondents (100%) reported washing their hands using soap, or handwash, reflecting good awareness of proper hand hygiene methods.

Table 4.3 - Knowledge of representatives of village institution regarding anemia

Particulars		**N = 27**	**%**
Familiar to term anemia	Yes	27	100%
Causes of anemia	Inadequate consumption of iron rich foods in the diet	26	96%
	Consumption of Iron Rich Foods with inhibitors like Tea and Coffee	9	33%
	Excessive blood loss as in menstruation, delivery, haemorrhage	6	22%
	Blood loss during accidents	2	7%
	Frequent Episodes of Malaria	9	33%
	Hookworm Infestations	11	41%
	Don't know	1	4%
Signs and symptoms of anemia	Fatigue	21	78%
	Weakness	22	81%
	Pallor of skin, tongue and nails	21	78%
	Shortness of breath	4	15%
	Dizziness	20	74%
	Brittle and spoon-shaped nails	12	44%
	Headaches	9	33%
	Fast irregular heartbeat	3	11%
	Swelling and soreness of the tongue	5	19%
	Tingling sensations in legs	5	19%
	Don't know	2	7%
preventive measures for Anemia	Consumption of Iron Rich Food with enhancers and dietary diversity	25	93%
	Consume Iron Folic Acid Tablets	25	93%
	Prevention of Malaria	3	11%
	Cleanliness of house inside and outside	5	19%
	Consume Albendazole tablets twice a year	4	15%
	Eat Purna Shakti packets	7	26%
	Don't know	2	7%

iron rich sources of food	Green leafy vegetables	25	93%
	Whole cereals and Pulses	14	52%
	Dates	25	93%
	Beet	23	85%
	Soybean	3	11%
	Jaggery	23	85%
	Egg/Meat/ Fish	7	26%
foods should be consumed with iron rich food	Vitamin C-rich foods- Amla/ lemon/ orange	19	70%
	Don’t know	8	30%
foods should not to be consumed with iron rich foods	Tea or coffee	13	48%
	Milk and milk products	10	37%
	Don’t know	8	30%
Beneficiaries of IFA tablet/ syrup	Pregnant mothers	27	100%
	Lactating mothers	24	89%
	Adolescent girls	27	100%
	Children <6 years	22	81%
	Women of reproductive age (WRA)	19	70%
IFA tablet provided by	ASHA	27	100%
	ANM	9	33%
	AWW	2	7%
	FHW	7	26%

Table 4.4– Knowledge related to Water, Sanitation, and Hygiene (WASH) practices of village institution representatives

Particulars		**N = 27**	**%**
Drinking water source at home	Tap water inside house	26	96%
	Tap water outside house	1	4%
When to wash hands?	After using toilet	27	100%
	Before cooking	27	100%
	After handling the child	23	85%
	After handling cattle	16	59%
	Before eating	11	41%
How to wash hands?	With soap/ash/handwash	27	100%

Dietary knowledge of representatives of village institution

An assessment was conducted to evaluate the dietary knowledge of representatives of village institution, focusing on their awareness of food groups, balanced diets, essential nutrients, and the consequences of nutrient deficiencies. The findings provide insights into their understanding of nutrition and dietary practices which is shown in the Table 4.5

❖ Awareness of food groups and balanced diet

All respondents (100%) demonstrated awareness of different food groups essential for a healthy diet. Regarding the definition of a balanced diet, 93% recognized it as one that includes a variety of food groups such as cereals, pulses, dairy products, fruits, vegetables, eggs, fish/meat, and oil/ghee. Additionally, 26% understood a balanced diet as one that provides an adequate quantity of nutrients to meet the body's requirements.

❖ Essential food groups for daily diet

When asked about food groups that should be included in the daily diet, all representatives (100%) identified grains; white roots, tubers, plantains and pulses as essential components. Other recognized food groups included:

- Nuts and seeds (41%)
- Dairy products (74%)
- Meat, poultry, and fish (70%)
- Eggs (70%)
- Dark green leafy vegetables (GLVs) (67%)
- Other vitamin A-rich fruits and vegetables (37%)
- Other vegetables (93%)
- Other fruits (78%)

❖ Nutrient requirements in daily diet

Regarding nutrients, all respondents (100%) recognized protein, vitamins, and minerals in the diet are important. Additionally, a significant proportion acknowledged the necessity of Carbohydrates (89%) and Fats (78%) as nutrient.

❖ Consequences of deficiencies of nutrients

The representatives also demonstrated an understanding of the health risks associated with inadequate nutrient intake:

- 100% recognized undernutrition as a major consequence.
- 70% identified overweight and obesity as potential risks.
- 52% acknowledged deficiencies of vitamins and minerals as a health concern.

Table 4.5 – Dietary knowledge and practices of representatives of village institution

Particulars		**N = 27**	**%**
Aware of different food groups	Yes	27	100%
Meaning of healthy diet of balanced diet	A diet that includes Cereals, Pulses, Dairy products, Fruits and Vegetables, egg/fish/meat, oil/ghee	25	93%
	A diet that has the right quantity of food groups that can meet all the nutrient requirements	7	26%
Different food group that should be included in daily diet	Grains, white roots and tubers, and plantains	27	100%
	Pulses (beans, peas and lentils)	27	100%
	Nuts and Seeds.	11	41%
	Dairy	20	74%
	Meat, Poultry and Fish	19	70%
	Eggs	19	70%
	Dark GLVs	18	67%
	Other vitamin A-rich fruits and vegetables	10	37%
	Other Vegetables	25	93%
	Other Fruits	21	78%
nutrients are required in daily diet	Carbohydrates	24	89%
	Protein	27	100%
	Fat	21	78%
	vitamins and minerals	27	100%
What happen when nutrients are not consumed in required quantity	Undernutrition	27	100%
	Overweight and obesity	19	70%
	Different nutrient deficiencies (Vitamins and mineral deficiencies)	14	52%
	non-communicable diseases like diabetes,CVD, cancer, etc.	12	44%
	Anemia	3	11%
Familiar to term diet diversity	Consuming a wide variety of foods and food groups	27	100%
	Including GLV/fruits/ milk	3	11%

- 44% associated poor nutrition with non-communicable diseases such as diabetes, cardiovascular diseases (CVD), and cancer.
- 11% specifically linked nutrient deficiencies to anemia.

Knowledge of representatives of village institution regarding undernutrition

An assessment was conducted to evaluate the understanding of undernutrition among village institution representatives, focusing on their familiarity with the term, its meaning, and preventive measures. The findings are shown in the Table 4.6

❖ Familiarity with Undernutrition

Ninty six percent of respondents were aware of the term undernutrition.

❖ Understanding of Undernutrition

When asked about the meaning of undernutrition, the responses varied:

- 89% associated it with low weight for age.
- 59% linked it to an inability to work properly and weakness.
- 19% described it as being unhealthy.
- 4% did not provide a response.

❖ Preventive Measures Against Undernutrition

The respondents identified several ways to prevent undernutrition, with the most common response being:

- Regular consumption of a balanced diet (96%).
- Availing benefits of government nutrition services (41%).
- Maintaining cleanliness at home and in the village (19%).
- A small fraction (4%) reported a lack of knowledge on preventive measures.

Knowledge and practices of village institution representatives regarding unhealthy foods

When representatives of village institutions were asked about their knowledge and consumption patterns of unhealthy foods, their responses provided insights into their understanding of unhealthy foods, meal consumption habits, frequency of eating outside, and preferences for junk or packaged foods. The findings are shown in the Table 4.7

❖ Understanding of Unhealthy Foods

When asked about what constitutes unhealthy food, responses varied:

- Ninety-three percent correctly identified foods that contain excessive amounts of added sugar, unhealthy fats, and sodium as unhealthy.
- Eleven percent considered fresh and minimally processed foods as unhealthy.

- Seven percent were unaware of what qualifies as unhealthy food.

❖ Meal Consumption Frequency

The representatives reported their eating patterns as follows:

- All of the representatives consumed breakfast, lunch, and dinner daily.
- Forty-eight percent had supper as an additional meal.
- Four percent occasionally had brunch in their routine.

❖ Frequency of Eating Outside the Home

The survey revealed varying habits regarding eating outside:

- Four percent ate outside daily.
- Eleven percent dined out three to four times a week.
- Twenty-six percent ate outside two to three times a week.
- Forty-four percent limited outside food to once a week.
- Fifteen percent indulged in outside food only once a month.

❖ Purchasing of Junk and Packaged Foods

ninety-three percent of the representatives admitted to buying junk or packaged foods, while only seven percent refrained from purchasing such items.

❖ Preferences for Junk and Packaged Foods

Among those who consumed junk food, their preferences included:

- Eighty-one percent opted for packaged snacks like potato wafers, banana chips, Kurkure, and Gopal namkeen.
- Seventy-eight percent favored fried snacks such as samosa, bhajiya, kachori, and panipuri.
- Seventy-four percent consumed sweets like burfi, laddoo, pastries, cakes, chocolates, ice cream, and biscuits.
- Thirty-three percent preferred carbonated drinks such as ThumsUp, 7Up, Pepsi, Coca-Cola, and Limca.

Table 4.6– Knowledge of representative of village institution regarding undernutrition

Particulars		**N =27**	**%**
Familiar with term undernutrition	Yes	26	96%
	No	1	4%
Meaning of undernutrition	Low weight for age	24	89%
	Can't work properly, Weakness	16	59%
	Being unhealthy	5	19%
	Not applicable	1	4%
preventive measures for undernutrition	To consume a balanced diet regularly	26	96%
	To keep home and village clean	5	19%
	To avail the benefits of government services	11	41%
	Don't know	1	4%

Table 4.7– Knowledge and practices about unhealthy foods of representative of village institution

Particulars		N =27	%
Unhealthy food	Foods that are fresh and minimally processed	3	11%
	Foods that contain excessive amounts of added sugar, unhealthy fats, and/or sodium	25	93%
	Don't know	2	7%
Frequency of consumption of various meals	Breakfast	27	100 %
	Brunch	1	4%
	Lunch	27	100 %
	Supper	13	48%
	Dinner	27	100 %
Frequency of eating outside home	Daily	1	4%
	3-4 times a week	3	11%
	2-3 times a week	7	26%
	once a week	12	44%
	once in a month	4	15%
buy any junk food/packaged food	Yes	25	93%
	No	2	7%
Preference of buying junk/ packed food	Packed snacks (Potato/ banana wafers, Kurkure, Gopal)	22	81%
	Fried snacks (samosa, bhajiya, kachori,panipuri)	21	78%
	Carbonated drinks (ThumsUp,7 Up, Pepsi,Coca-Cola, Limca)	9	33%
	Sweets (burfi, laddoo, pastries/ cakes,chocolates, ice cream, biscuits)	20	74%

Knowledge of representatives of village institutions regarding selected government services

The study examined the awareness of village institution representatives about various government services, including the Public Distribution System (PDS), Antyodaya Anna Yojana (AAY), the Mid-Day Meal (MDM) scheme, and the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY). Their understanding of the beneficiaries of key health programs, such as the distribution of Iron and Folic Acid (IFA) tablets, deworming medication, vitamin A supplements, immunization, and other essential healthcare services, was also assessed. The findings are shown in the Table 4.8

- Public Distribution System (PDS) and Antyodaya Anna Yojana (AAY)

  All participants confirmed the availability of the PDS in their village. The commonly provided food items under the scheme included fortified wheat and pulses, reported by nearly nine out of ten respondents. Other provisions such as oil, iodized salt, and sugar were known to be available but to a lesser extent. However, a small fraction remained unaware of the complete list of items distributed under PDS.

  When asked about the Antyodaya Anna Yojana (AAY), more than three-fourths of the respondents were familiar with the scheme, while the rest were unaware. However, there was confusion about its benefits, as some believed it provided 35 kg or 10 kg of food grains per household per month, while others misunderstood the scheme entirely. Nearly half of the respondents were uncertain about its provisions.

- Mid-Day Meal (MDM) scheme

  Every participant demonstrated familiarity with the Mid-Day Meal (MDM) program. Regarding its beneficiaries, most respondents correctly identified primary and upper primary school children as recipients, though a small percentage were unsure.

  Awareness of Ayushman Bharat PM-JAY

  Almost all representatives were aware of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY), with only a minor portion unfamiliar with it. However, opinions on the coverage amount under this scheme varied. While the majority correctly stated that the scheme provides ₹10 lakh per family per year for secondary and tertiary care, some mistakenly believed the coverage was ₹5 lakh or ₹2 lakh per family per year.

  Utilization of Health and Wellness Centres

  More than four-fifths of the participants had visited a Health and Wellness Centre in their village, while the rest had not.

Awareness of Beneficiaries of Key Health Interventions

Knowledge about the beneficiaries of essential health services varied significantly among respondents.

- Iron and Folic Acid (IFA) Tablets: Recognized as being provided to pregnant women, lactating women, adolescent girls, children under six years, and women of reproductive age, though a small proportion were unaware.
- Deworming Tablets: Most respondents identified children under six years as the primary beneficiaries. However, knowledge regarding pregnant women, lactating women, adolescent girls, and women of reproductive age as recipients was notably low. More than two-thirds were unaware of the full range of beneficiaries.
- Menstrual Hygiene Management (MHM): Awareness was significantly low, with very few recognizing its intended beneficiaries. Over half of the respondents were completely unaware of the scheme.
- Vitamin A Supplements: The majority acknowledged that children under six years receive these supplements, though misconceptions existed about whether pregnant women, lactating women, adolescent girls, and women of reproductive age also benefited. More than half of the participants lacked knowledge about this intervention.
- Immunization: Most respondents correctly identified pregnant women, lactating women, and children under six years as beneficiaries, though awareness about immunization for adolescent girls and women of reproductive age was lower.
- Health Check-Ups (Height and Weight Monitoring): Pregnant and lactating women were widely recognized as recipients of routine check-ups, along with children under six years and adolescent girls. However, knowledge about check-ups for women of reproductive age was notably low.
- Take-Home Ration (THR): The majority knew that pregnant women, lactating women, adolescent girls, and children under six years were eligible for THR. However, awareness of its availability for women of reproductive age remained limited.
- Counseling Sessions: Most respondents were aware that pregnant and lactating women, adolescent girls, and children under six years were eligible for counseling sessions. However, a significant portion remained unaware of these services for women of reproductive age

Table 4.8 – Knowledge regarding selected government services

Particulars		**N=27**	%
Availability of PDS in village	Yes	27	100%
food items are available in PDS	Fortified Wheat	24	89%
	Dal	24	89%
	Oil	17	63%
	Sugar	8	30%
	Iodized Salt	19	70%
	Don't know	3	11%
Known to Antyodaya Anna Yojana (AAY)	Yes	21	78%
	No	6	22%
Benefits of Antyodaya Anna Yojana (AAY)	The poorest of poor households will receive 35 kg of food grains per household per month	7	26%
	The poorest of poor households will receive 10 kg of food grains per household per month	7	26%
	The poorest of poor households will not receive any food grains per household per month	3	11%
	Don't know	13	48%
	Not applicable	6	22%
Known to MDM (mid-day meal) scheme	Yes	27	100%
Beneficiaries of MDM	Children studying in Primary and Upper Primary classes	25	93%
	Don't know	2	7%
Known to Ayushman Bharat PM JAY scheme	Yes	26	96%
	No	1	4%
Benefits of Ayushman Bharat PM JAY scheme	It provides a cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India	4	15%
	It provides a cover of Rs. 2 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India	3	11%
	It provides a cover of Rs. 10 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India	17	63%
	Don’t know	3	11%
visited Health and Wellness centre in village	Yes	22	81%
	No	5	19%
Beneficiaries of IFA tablets	Pregnant women	25	93%
	Lactating women	23	85%
	Adolescent girls	23	85%
	Children <6yr	20	74%
	Women of reproductive age	22	81%
	Don’t know	6	22%

Beneficiaries of Deworming tablets	Pregnant women	13	48%
	Lactating women	3	11%
	Adolescent girls	3	11%
	Children <6yr	22	81%
	Women of reproductive age	3	11%
	Don’t know	18	67%
Beneficiaries of MHM	Pregnant women	1	4%
	Lactating women	1	4%
	Adolescent girls	1	4%
	Women of reproductive age	1	4%
	Don’t know	14	52%
Beneficiaries of Vit A supplements	Pregnant women	12	44%
	Lactating women	1	4%
	Adolescent girls	2	7%
	Children <6yr	21	78%
	Women of reproductive age	2	7%
	Don’t know	15	56%
Beneficiaries of Immunization	Pregnant women	23	85%
	Lactating women	23	85%
	Adolescent girls	14	52%
	Children <6yr	25	93%
	Women of reproductive age	4	15%
	Don’t know	5	19%
Beneficiaries of health check-up (height and weight)	Pregnant women	25	93%
	Lactating women	25	93%
	Adolescent girls	17	63%
	Children <6yr	24	89%
	Women of reproductive age	1	4%
	Don’t know	7	26%
Beneficiaries of THR	Pregnant women	24	89%
	Lactating women	24	89%
	Adolescent girls	21	78%
	Children <6yr	23	85%
	Women of reproductive age	4	15%
	Don’t know	8	30%
Beneficiaries of counselling session	Pregnant women	23	85%
	Lactating women	23	85%
	Adolescent girls	19	70%
	Children <6yr	10	37%
	Women of reproductive age	8	30%
	Don’t know	13	48%

Understanding of the Nutri Smart Village (NSV) concept and village development planning

The study assessed the awareness and involvement of village institution representatives regarding the Nutri Smart Village (NSV) concept and their participation in developing a village development plan. The findings reveal limited awareness and engagement in the planning process. The findings are shown in the Table 4.9

- Familiarity with the NSV Concept

  A vast majority, ninety-six percent, of respondents were unaware of the Nutri Smart Village (NSV) concept, while only four percent had any knowledge about it.

- Participation in Village Action Planning

  When asked about their contribution to the village development action plan, nineteen percent of respondents reported having actively participated, while eighty-one percent stated that they had not been involved in any way.

- Responsibility for Village Development Planning

  Responses varied regarding who is responsible for preparing the village development plan. Among the respondents:

  - Thirty-three percent identified the Talati (village revenue officer) as responsible.
  - Nineteen percent stated that the Sarpanch (village head) leads the planning.
  - Four percent mentioned the VDC (Village Development Committee).
  - Four percent pointed to the Vahivatdar as responsible.
  - Nineteen percent were unsure of who prepares the plan.
  - Forty-eight percent found the question not applicable.

- Inclusion of Health and Nutrition in Development Plans

  When asked whether health and nutrition aspects should be included in the village development plan, seventy-four percent agreed that these aspects should be prioritized. However, twenty-six percent believed that health and nutrition should not be part of the village development plan.

Table 4.9– Knowledge regarding Nutri Smart Village (NSV) concept and village development plan

Particulars		**N = 27**	%
Known to NSV concept	Yes	1	4%
	No	26	96%
What is NSV concept	Don’t know	1	4%
	Not applicable	26	96%
contribution in developing action plan for the village	Yes	5	19%
	No	22	81%
who prepares the village development plan	Talati	9	33%
	Vahivatdar	1	4%
	Sarpanch	5	19%
	VDC committee	1	4%
	Don’t know	5	19%
	Not applicable	13	48%
health and nutrition aspects should be included in village development plan	Yes	20	74%
	No	7	26%

- **Nutritional status and dietary practices of the children aged 6 to 24 months.**

  Background information of the children aged 6 to 24 months

  Maternal and child health indicators like nutrition status of young children, IYCN practices and service utilization of various program are the key components to improve it. To achieve NSV or suposhit gram panchayat, information was elicited for such aspects from mothers of children 6 to 24 months.

  To gain insights into the background information of children aged 6 to 24 months, data was gathered on their age distribution, birth order, gender, and birth weight. The findings are shown in the Table 4.10

  - Age Distribution

    Among the children surveyed, 33% were between 6 to 12 months, while the remaining 67% were aged 13 to 24 months.

  - Birth Order

    The data revealed that 39% of the children were first-borns, while 43% were the second child in their families. Additionally, 11% were the third child, and 7% belonged to families with four or more children.

  - Gender Distribution

    The gender distribution was nearly equal, with 49% of the children being boys and 51% being girls.

  - Birth Weight

    Regarding birth weight, 17% of children were born with a low birth weight (less than 2.5 kg), while the majority, 83%, had a birth weight of 2.5 kg or more.

Anthropometric Measurements and Nutritional Status of Children Aged 6 to 24 Months

An assessment was carried out to evaluate the growth and nutritional status of children between 6 to 24 months of age. The average weight recorded among the children was 8.60 ±1.35 (kg), while their mean height was 73.96 ±6.14 (cm). The findings are shown in the Table 4.11

The mean birth weight of this children was 2.62 ± 0.36 (kg).

Further analysis of their nutritional status revealed that 46% of the children experienced stunting. Wasting was observed in 15% of the children. Additionally, 29% of the children were found to be underweight. The findings are shown in the Table 4.12

Table 4.10 - Background information of the children aged 6 to 24 months

Particulars		**N =27**	**%**
Age of the child	6 to 12 months	29	33%
	13 to 24 months	58	67%
Mean age (m)	15.2 ± 4.88		
Birth order of the child	1	34	39%
	2	37	43%
	3	10	11%
	>4	6	7%
Sex of the child	Boy	43	49%
	Girl	44	51%
Birth weight of the child	<2.5 kg	15	17%
	>=2. 5 kg	72	83%

Table 4.11- Mean anthropometric measurement of children (6 to 24 months)

Particulars	**N = 87**	**Standard Deviation (SD)**	**range (cm)**
Mean weight (kg)	8.60	±1.35	7.26 to 9.96
Mean height (cm)	73.96	±6.14	67.85 to 80.08
Mean birth weight (kg)	2.62	±0.36	2.261 to 2.991

Table 4.12 - Nutritional status of the children (6 to 24 months) (WHO growth standard 2006)

Particulars	**N=87**	**%**
Stunting	40	46%
Severe stunting	16	18%
Wasting	13	15%
Severe wasting	5	6%
Underweight	24	29%
Severe underweight	7	8%

Dietary diversity among children aged 6 to 24 months

An evaluation of the dietary diversity among children aged 6 to 24 months highlighted their consumption patterns across 7 food groups. The findings indicated that 98% of the children consumed grains, roots, and tubers, while 93% included legumes and nuts in their diet. Dairy products were consumed by 63% of the children.

In terms of fruit and vegetable intake, only 1% of the children consumed vitamin A-rich fruits and vegetables, whereas 64% had other types of fruits and vegetables in their diet. Additionally, 70% of the children were breastfed as part of their nutritional intake. The findings are shown in the Table 4.13

Meal Frequency, Dietary Diversity, and Adequate Diet Among Children Aged 6 to 24 Months

An assessment of feeding practices among children aged 6 to 24 months examined their meal frequency, dietary diversity, and overall adequacy of their diet. The findings revealed that 40% of the children met the minimum meal frequency (MMF) requirement. However, only 18% of the children achieved the minimum dietary diversity (MDD), indicating limited variety in their food intake. Furthermore, a lower percentage, just 3%, met the criteria for a minimum adequate diet (MAD), reflecting gaps in both meal frequency and dietary diversity necessary for optimal nutrition. The findings are shown in the Table 4.14

- **IYCN and WASH practices among mothers of children aged 6 to 24 months.**

Background information of mothers of children aged 6 to 24 months

The study gathered demographic details of 87 mothers, focusing on their age, educational background, and occupation. In terms of age distribution, 3% of the mothers were between 18 to 20 years, while 36% fell within the 21 to 25 years range. The majority, 61%, were over 25 years old, with the overall age range spanning from 18 to 36 years.

Regarding educational attainment, 8% of the mothers were illiterate, while 36% had completed primary education. Additionally, 23% had received secondary-level education, and 24% had finished high school. A smaller proportion, 5%, had pursued undergraduate studies, while another 5% had completed postgraduate education.

When examining occupational status, the majority of mothers (90%) were housewives. A small fraction, 5%, were engaged in farming or farm labor, while another 5% worked as general laborers. Additionally, 1% were employed as sweepers. The findings are shown in the Table 4.15

Table 4.13 – Dietary diversity of the children (6 to 24 months)

Particular	N=87	%
Grains,roots,tubers	85	98%
Legumes and nuts	81	93%
Dairy products	55	63%
Vit A rich fruit and vegetable	1	1%
Other fruit and vegetable	56	64%

Table 4.14- Minimal meal frequency, minimum dietary diversity, minimum adequate diet by the children (6 to 24 months)

Particulars	N=87	%
MMF (minimum meal frequency)	35	40%
MDD (minimum dietary diversity)	16	18%
MAD (minimum adequate diet)	3	3%

Table 4.15 - Background information of the mothers of the children aged 6 to 24 months

Particulars		N = 87	%
Age of the mother (years)	18-20	3	3%
	21-25	31	36%
	>25	53	61%
Age range (years)	18 to 36		
Mean age (years)	26.74± 4.31SD		
Education of the mother	Illiterate	7	8%
	Primary	31	36%
	Secondary	20	23%
	High school	21	24%
	Under graduate	4	5%
	Post graduate	4	5%
Occupation of the mother	Farming/farm labour	4	5%
	Housewife	78	90%
	Labour	4	5%
	sweeper	1	1%

Infant and young child feeding (IYCF) practices among mothers of children aged 6 to 24 months

The study examined Infant and Young Child Feeding (IYCF) practices among mothers, focusing on breastfeeding initiation, colostrum feeding, complementary feeding practices, and reasons for introducing complementary foods at different ages. The findings are shown in Table 4.16

Regarding breastfeeding initiation, 56% of mothers-initiated breastfeeding within one hour of birth, while 31% did so after an hour but on the same day. However, 13% delayed breastfeeding until the next day or beyond. Colostrum, the first milk essential for newborn immunity, was given by 95% of mothers, while 5% did not provide it.

At the time of the study, 71% of children were still being breastfed, while 29% had stopped. The frequency of breastfeeding per day varied: 11% breastfed 1 to 4 times, 52% did so 5 to 8 times, and 36% breastfed more than 8 times. Additionally, 95% of mothers breastfed their children at night, while 5% did not. The duration of breastfeeding showed that 7% of mothers stopped breastfeeding at 6 months, while 22% continued until 7 to 12 months, and 70% breastfed up to 12 to 24 months. Exclusive breastfeeding for six months was practiced by 86% of mothers, while 14% did not follow this recommendation.

When it came to complementary feeding, only 13% introduced it exactly at 6 months, while 63% initiated it after completing 6 months, and 24% started after 7 months. The first complementary food was given at home in 80% of cases, while 20% of children received it at an Anganwadi center. At the time of the study, 69% of children were being breastfed alongside complementary feeding, while 31% were not.

Several reasons for early or delayed complementary feeding were identified. Among those who did not introduce complementary feeding at 6 months, 6% feared that the child might develop stomach aches, 1% worried about digestion issues, 20% were concerned about vomiting or diarrhoea, and 2% were unaware of the correct timing. However, 79% of mothers did not face any concerns.

For those who introduced complementary feeding at six months, the reasons included ensuring the child’s health (59%), satisfying hunger (49%), improving sleep patterns (8%), reducing crying (6%), and acting on advice from doctors (37%) or Anganwadi/health workers (37%). Additionally, 47% believed breast milk alone was insufficient, and 67% introduced complementary feeding to support weight gain.The study also looked at the practice of prelacteal feeding, which refers to giving fluids other than breast milk to newborns. While 13% of mothers had given prelacteals, 87% did not follow this practice.

Table 4.16 – Infant young child feeding practices of the mothers of children (6 to 24 m)

Particulars		**N= 87**	**%**
Early initiation of the breast milk	With in 1 hr	49	56%
	After 1 hr but same day	27	31%
	Next day or beyond	11	13%
Colostrum given	Yes	83	95%
	No	4	5%
Child being currently breastfed	Yes	62	71%
	No	25	29%
Frequency of breastfeeding in a day	1-4 times	7	11%
	5-8 times	32	52%
	>8 times	22	36%
Breastfeed child during night hours	Yes	59	95%
	No	3	5%
Month at which breastfeeding was stopped	6^{th} month	2	7%
	7-12 month	6	22%
	12-24 month	19	70%
Exclusives breastfeeding done	Yes	75	86%
	No	12	14%
Month at which complementary feeding was initiated	At 6 months	11	13%
	After completion of 6 month	55	63%
	After 7 months	21	24
Place for first complementary feed	Home	68	80%
	Anganwadi	17	20%
Currently breast-feeding child along with complementary feeing	Yes	59	69%
	No	26	31%
Reason for initiating cf early or late (not on completion of 6 month)	Child may get stomach ache	5	6%
	Child may not be able to digest the food	1	1%
	Child may have vomiting/diarrhea	17	20%
	Unaware of the correct age of introducing CF	2	2%
	Not applicable	69	79%
Reasons for initiating CF at completion of six months	Child will be healthy	51	59%
	Hunger will be satisfied	43	49%
	Will sleep more soundly	7	8%
	Will not cry	5	6%
	Counseled by doctor	32	37%
	Counseled by AWW/Health functionary	32	37%
	Breast milk alone not sufficient	41	47%
	Weight increases	58	67%
	Not applicable	20	23%
Prelacteals given	Yes	11	13%
	No	76	87%

Hygiene practices among mothers of children aged 6 to 24 months

The study examined the hygiene practices followed by mothers while handling and feeding their children. It was observed that all of the mothers reported washing their hands regularly. Among them, 97% used soap, while 2% relied on ash, and 1% used other alternatives for handwashing.

Mothers practiced handwashing at different times based on their daily activities. 55% of mothers washed their hands before preparing food, while 10% did so after cooking. When it came to hygiene related to child care, 54% washed their hands after cleaning the child's feces, and 39% practiced handwashing before feeding the child. However, only 8% washed their hands after feeding, whereas 45% followed handwashing at all these crucial times.

Regarding hygiene measures taken while feeding the child, 23% ensured that both the mother and child washed hands before feeding, while 41% prioritized cleanliness of the spoon and bowl used. Additionally, 15% checked that the food was at a safe temperature, 16% ensured the food was not stale, and 24% considered providing safe drinking water. Only 11% of mothers focused solely on their own handwashing, while 55% incorporated all these hygiene measures to ensure proper feeding practices. Findings are shown in the Table 4.17

- **Selected government services utilized by mother**

Utilization of Integrated Child Development Services (ICDS) by mothers of children aged 6 to 24 months

Suposhit Gram Panchayat Abhiyan is also focusing on indicators on utilization of services by target groups. Information is presented in Table 4.18

The present study assessed the extent to which mothers utilized services under the Integrated Child Development Services (ICDS) programme for their children. It was found that all mothers (100%) reported receiving Bal Shakti packets from the Anganwadi center. Among them, 61% received seven packets, while 21% received fewer than seven packets, and 13% obtained more than seven packets. A small proportion (3%) were unsure of the exact quantity received. In terms of distribution frequency, 97% of mothers received the Bal Shakti packets monthly, whereas only 1% received them weekly.

Table 4.17 – Hygiene practices of the mothers of children (6 to 24 months)

Particulars		**N = 87**	**%**
Do you wash hands regularly?	Yes	87	100%
Hand wash with	Soap	84	97%
	Ash	2	2%
	Other	1	1%
When do you wash your hand?	Before preparing the food	48	55%
	After preparing the food	9	10%
	After cleaning the child's feces	47	54%
	Before feeding the child	34	39%
	After feeding the child	7	8%
	All of the above	39	45%
Care taken by mother while feeding child	Both mother and child wash hands	20	23%
	Cleanliness of spoon and bowl	36	41%
	Temperature of the food (not too hot/cold)	13	15%
	Food should not be stale	14	16%
	Safe drinking water	21	24%
	Mother wash hands	10	11%
	All of the above	48	55%

Table 4.18 - Utilization of the selected services for the children (6 to 24 months) by the mothers under Integrated Child Development Services (ICDS) programme

Particulars		**N = 87**	**%**
Bal shakti received from Anganwadi	Yes	87	100%
Quantity of packets received	7 packets	53	61%
	Less than 7 packets	18	21%
	More than 7 packets	11	13%
	Don’t know	3	3%
Frequency of receiving bal shakti packet	Weekly	1	1%
	Monthly	84	97%
Balshakti consumed by children	Yes	66	76%
	No	21	24%
Children like bal shakti	Yes	66	76%
	No	21	24%
Children eat balshakti regularly	Yes	30	34%
	No	39	45%
Frequency of having bal shakti in a day	1	13	15%
	2	15	17%
	>4	1	1%
Quantity of having bal shakti	1 cup	2	2%
	½ cup	9	10%
	2/3 cup	15	17%
	¼ cup	3	3%
Mamta diwas attended by mother	Yes	56	64%
	No	31	36%
Suposhan diwas attended by mother	Yes	43	49%
	No	44	51%
Annanprasan diwas attended by mother	Yes	24	28%
	No	63	72%

When it came to actual consumption, 76% of children consumed Bal Shakti, and the same percentage of mothers reported that their children liked it. However, only 34% of children consumed it regularly, while 45% did not eat it consistently. The frequency of Bal Shakti intake per day varied: 15% of children consumed it once a day, 17% had it twice a day, and 1% consumed it more than four times a day.

Regarding the quantity consumed, 2% of children consumed one cup per serving, 10% consumed half a cup, 17% consumed two-thirds of a cup, and 3% consumed only a quarter cup. Sixty four percent of mothers attended Mamta Diwas, while 36% did not participate. Similarly, 49% attended Suposhan Diwas, whereas 51% did not. Attendance for Annanprasan Diwas was lower, with only 28% of mothers participating, while 72% did not attend.

- **Nutritional status of primary school children**

  School age population is also very important group for inculcating healthy dietary practices and utilization of relevant program services to improve their nutritional status to get the inside on above aspects from the primary school children of selected village. Information was gathered on 117 children's studying in 6,7,8 standard. Information is presented in the Table 4.19

  Background information on government primary school children enrolled in standards 6 to 8, focusing on age, gender distribution, and grade level. The children's ages ranged from 10 to 15 years. The largest proportion of students were aged 11 years (31.62%) and 12 years (31.62%), followed by those aged 10 years (17.95%), 13 years (16.24%), and a small percentage above 14 years (1.71%).

  In terms of gender distribution, the sample included 57 boys (48.72%) and 60 girls (51.28%), indicating a nearly equal representation of both genders.

  Regarding grade levels, 30.77% of children were in standard 6, 37.61% were in standard 7, and 31.62% were in standard 8.

  - Anthropometric measurements of children (standards 6 to 8)

  The study assessed the average anthropometric measurements of children in standards 6 o 8. The mean weight of the children was recorded at 30.09 kg±7.74SD, while the mean height was 137.24 cm±8.67SD. Finding is shown in the Table 4.20

❖ Nutritional status of primary school children

An evaluation of the nutritional status of 117 primary school children revealed that 31.62% were categorized as stunted. Additionally, 35.04% of the children were identified as thin Finding is shown in the Table 4.21

- **Service utilization by the primary school children (MDM, IFA, Deworming, health check-up)**

  The study also examined the utilization of health and nutrition services among 87 children before any intervention. The findings indicate that 82.91% of the children had consumed Iron and Folic Acid (IFA) tablets, while 80.34% had taken deworming tablets. Additionally, 81.20% reported consuming Mid-Day Meals (MDM), and 100% of the children had undergone health check-ups. Finding is shown in the Table 4.22

Table 4.19- Background information of children (std 6 to 8)

Particulars		N =117	%
Age of the children(y)	10	21	17.95%
	11	37	31.62%
	12	37	31.62%
	13	19	16.24%
	>14	3	1.71%
Age range (y)	10-15		
Mean age (y)	11.52±1.05		
Sex of the children	Boy	57	48.72%
	Girl	60	51.28%
Standard	6	36	30.77%
	7	44	37.61%
	8	37	31.62%

Table 4.20 - Mean anthropometric measurement of children (std 6 to 8)

Particulars	N =117	Standard Deviation (SD)	Range (cm)
Mean weight (kg)	30.09 kg	±7.74	9.76 kg to 68.94 kg
Mean height (cm)	137.24 cm	±8.67	128.58 cm to 145.91 cm

Table 4.21 - Nutritional status of the primary school children (std 6 to 8)

Particulars	N = 117	%
Stunting (HAZ≤ 2SD)	37	31.62%
Severe stunting (HAZ≤ 3SD)	18	15.38%
Thinness (BAZ≤ 2SD)	41	35.04%
Severe Thinness (BAZ≤ 3SD)	11	9.40%

Table 4.22 - Utilization of the selected services by children (std 6 to 8)

Particulars	N = 117	%
IFA tablet consumption	97	82.91%
Deworming tablet consumption	94	80.34%
MDM consumption	95	81.20%
Health checks up	117	100.00%

HIGHLIGHTS

- Total 27 representatives from 8 village institutions were enrolled for the study
- Forty-eight percent of village institution representatives were in the age range 36-45 years.
- Seventy eight percent of representatives of village institution were aware of early breastfeeding initiation, colostrum, and 70% were aware of the correct period of exclusive breastfeeding.
- Ninety six percent correctly identified inadequate iron intake as a cause of anemia, but only 33% knew about absorption inhibitors.
- Ninety three percent correctly defined a balanced diet and showed strong dietary knowledge.
- Eighty nine percent linked undernutrition to low weight-for-age, while 59% associated it with weakness.
- Ninety three percent identified unhealthy foods but also admitted to buying junk food.
- Ninety six percent were unaware of the Nutri Smart Village (NSV) concept, and only 19% participated in village action planning.
- Out of 87 mothers of young children enrolled, 56% of mothers-initiated breastfeeding within an hour, and 86% practiced exclusive breastfeeding for six months.
- Ninety-seven percent of mothers used soap for handwashing, while 3% relied on ash or other alternatives.
- Seventy six percent of children consumed Bal Shakti, but only 34% had it regularly.
- Forty percent children received minimum meal frequency, 18% children received minimum dietary diversity and only 3% children receive minimum adequate diet.
- In children age 6 to 24 months, it was found that 46% were stunted, 15% were wasted and 29% were underweight.
- Out of 117 primary school children, 31.62% of children were stunted, and 35.04% were categorized as thin.
- Regarding services utilization, 82.91% children consumed IFA tablets, 80.34% took deworming tablets, and 100% had undergone health check-ups. MDM consumption was 81.20%

Phase II: Training and sensitization of representatives of village institutions

To familiarised the Nutri-Smart Village (NSV) concept, a training program was conducted for enrolled representatives of various village institutions. The goal of this activity was to promote nutrition awareness, healthy dietary practices, and utilization of government services through a coordinated and community-driven approach.

- **Development of Training Module and Handouts**

A comprehensive training module was developed (Figure 4.1) to equip village representatives with the knowledge and skills necessary to implement the Nutri-Smart Village (NSV) Initiative effectively (APPENDIX IV, V). The module covered several key topics, starting with an introduction to the NSV concept, emphasizing the importance of a nutrition-sensitive approach in promoting community well-being. Participants were educated on the role of nutrition in improving overall health outcomes and the steps required to develop a Nutri-Smart Village using a lifecycle-based approach to nutrition.

The training included a detailed discussion on balanced diets and food groups, highlighting the significance of dietary diversity. Representatives learned about the essential food groups, methods to enhance the nutritional value of meals, and the importance of double fortified salt in preventing micronutrient deficiencies. The session also covered the role of balanced meals in daily nutrition and their impact on health.

Another crucial aspect of the training was Water, Sanitation, and Hygiene (WASH), which focused on the direct link between hygiene and overall health. Participants were educated on waterborne diseases, personal and environmental hygiene, safe water purification methods, proper handwashing techniques, and the importance of toilet usage in preventing infections and improving nutrition absorption.

The training further addressed anemia awareness and prevention, where representatives learned about the causes, symptoms, and effects of anemia. The session provided insights into iron-rich foods and dietary practices to prevent anemia and the importance of timely intervention.

Infant and Young Child Nutrition (IYCN) was another vital topic covered, emphasizing the significance of the first 1000 days of a child's life in ensuring proper growth and development. Participants were trained on exclusive breastfeeding practices, the benefits of colostrum (first milk), the introduction of complementary feeding, and age-appropriate dietary

recommendations. The training also provided guidance on nutritional support available through Anganwadi centers.

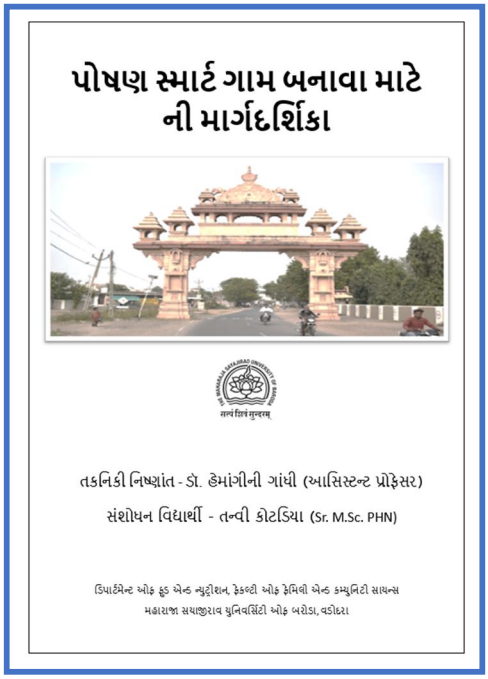
The issue of malnutrition was also extensively discussed, covering its types, causes, consequences, and impact on vulnerable groups such as children and women. Strategies to prevent malnutrition through proper diet, supplementation, and community interventions were emphasized.

In addition, representatives were introduced to various government services and schemes related to nutrition and public health, such as the Integrated Child Development Services (ICDS), Public Distribution System (PDS), and PM-POSHAN (Mid-Day Meal Program). The training aimed to ensure that village representatives were aware of these programs and could facilitate community participation in availing the benefits.

Lastly, an action plan for Nutri-Smart Village implementation was discussed, incorporating NITI Aayog's NSV framework and step-by-step strategies for village-level interventions. The module emphasized the need for a collaborative approach among different village institutions to create a sustainable, nutrition-focused environment.

This structured training module, along with handouts developed in Gujarati, ensured that representatives were well-equipped to drive awareness and action towards establishing Nutri-Smart Villages in their communities.

Figure 4.2- A training module and handout on NSV



- **Sensitization of Village Representatives and Action Plan Development**

Sensitization of village representatives for various activities to be done in 8 weeks duration for representatives of various village institutions to enable them to develop an action plan for their village, focusing on nutrition improvement and awareness under the Nutri-Smart Village initiative.

An 8-week action plan was formulated, outlining structured activities aimed at raising awareness about NSV through convergence among various village institutions.

The Table 4.23 outlines an 8-week action plan for various village institutions to promote nutrition awareness and improve community health. Each institution has specific roles in implementing initiatives aimed at fostering better nutritional practices, ensuring health awareness, and encouraging active participation from different community groups.

Anganwadi workers play a pivotal role in engaging the community by organizing rallies on adolescent nutrition, creating wall paintings to spread awareness, conducting nutrition awareness campaigns, and hosting recipe demonstrations and competitions among adolescent girls. These activities make nutrition education more interactive and accessible.

Schools contribute by setting up Nutrition Corners, providing students with visual information on healthy eating habits, and conducting educational sessions along with teacher-led discussions on nutrition. This ensures that children develop a strong foundation in healthy eating practices from an early age.

The Gram Sabha, as a village governance body, supports the initiative by holding meetings focused on nutrition promotion and integrating nutrition policies into community development plans. This involvement ensures that nutrition remains a priority in the village's overall development agenda.

ASHA workers focus on health interventions by arranging health check-up camps and conducting anemia screenings to assess and improve community health. Their role is crucial in identifying nutritional deficiencies and connecting individuals to healthcare services.

Village representatives, voluntary organizations (VOs), and Gram Sanjeevani contribute by conducting health and nutrition counseling sessions for community members, providing guidance on balanced diets and healthy lifestyles. Similarly, Community Groups and Self-Help

Groups (SHGs) facilitate discussions on household nutrition and food security, emphasizing sustainable and locally available food sources.

Kisan Mandlis, Dudh Mandli, and Pani Samiti work towards promoting village-wide engagement in nutrition improvement initiatives, ensuring that agricultural and dairy practices align with the community's nutritional needs. Additionally, Rashtriya Kishor Swasthya Karyakram (RKSK) peer educators strengthen the Nutri-Smart Village approach by organizing rallies and awareness campaigns focused on adolescent health and nutrition

- **Monitoring**

The execution of this action plan was systematically monitored by the researcher to ensure its effective implementation.

Table 4.23- Action plan for 8 weeks duration for various Village institution

Village institutions	Activities
Anganwadi Workers	• Organizing rallies on adolescent nutrition • Creating wall paintings to spread awareness • Conducting nutrition awareness campaigns • Recipes demonstration and competition between adolescents' girls
Schools	• Setting up Nutrition Corners • Conducting educational sessions on healthy nutrition practices
Gram Sabha	• Holding village meetings focused on nutrition promotion • Integrating nutrition policies into community development plans
ASHA Workers	• Arranging health check-up camps • Conducting anemia screening to assess community health
Village Representatives / VOs / Other Organizations/ gram sanjivani	• Conducting health and nutrition counseling sessions for community members
Community Groups & Self-Help Groups (SHGs)	• Hosting discussions on household nutrition and food security
Kisan Mandlis, dudh mandli & pani samiti	• Promoting village-wide engagement in nutrition improvement initiatives
Rashtriya Kishor Swasthya Karyakram (RKSK) peer educator	• Facilitating rallies and awareness campaigns to strengthen the Nutri-Smart Village approach

HIGHLIGHTS

- A structured 1-day training program was conducted to implement the Nutri-Smart Village (NSV) initiative.
- A comprehensive training module and handouts were developed in Gujarati for easy understanding.
- Training covered topics such as balanced diet, dietary diversity, WASH (Water, Sanitation, and Hygiene), anemia prevention, infant and young child nutrition (IYCN), malnutrition, and government nutrition schemes.
- Village representatives were sensitized to develop an 8-week action plan for nutrition awareness and intervention to carry out various activities like -
    - Organizing rallies on adolescent nutrition
    - Creating wall paintings to spread awareness
    - Conducting nutrition awareness campaigns
    - Recipes demonstration and competition between adolescents' girls
    - Setting up Nutrition Corners
    - Conducting educational sessions on healthy nutrition practices
    - Holding village meetings focused on nutrition promotion
    - Integrating nutrition policies into community development plans
    - Arranging health check-up camps
    - Conducting anemia screening to assess community health
    - Conducting health and nutrition counseling sessions for community members
    - Hosting discussions on household nutrition and food security
    - Promoting village-wide engagement in nutrition improvement initiatives

Phase III- Monitoring the execution of Action Plan

The researcher monitored the execution of the planned activities over a period of eight weeks.

Table 4.24 Monitoring check list of the execution of the planned activities over a period of eight weeks

Institution	Activities	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
ICDS Anganwadi	• Counseling of mothers of children aged 6 to 24 months • Recipe competition between adolescent girls to promote healthy eating • Counseling of pregnant mothers on healthy eating and breastfeeding • Rally by adolescent girls of Anganwadi • Nutrition corner development in Anganwadi	✓	✓	✓	✓		✓		
Gram Sanjeevni	• Gram Sanjeevni meeting on Nutrition and Health		✓						
Government School	• Counseling of upper primary children • Development of a nutrition corner • Counseling of secondary school children • Rally by upper primary children of Government School, Sokhda			✓ ✓ ✓	✓				
PHC	• Health camp organized • Posters placed in PHC and Sub-center to raise awareness on nutrition and health					✓			✓
Gram Panchayat	Wall painting in different areas of Sokhda							✓	
Kisan Mandli, Pani Samiti	Meeting on nutrition with Kisan Mandli, Pani Samiti								✓

The above table presents a structured overview of various nutrition and health-related activities conducted in Sokhda village over eight weeks, involving institutions such as ICDS (Anganwadi), Gram Sanjeevni, Government and Private Schools, PHC (Primary Health Center), Gram Panchayat, and Kisan Mandli. The Anganwadi centers played a key role in community engagement through counseling sessions for pregnant women and mothers of young children, as well as a recipe competition to promote healthy eating among adolescent girls. Additionally, Gram Sanjeevni and the Gram Panchayat contributed to awareness campaigns through meetings and the placement of wall posters in public areas.

Schools also played an active role, with both government and private institutions developing nutrition corners, organizing rallies with students, and conducting counseling sessions for upper primary children to instill awareness about healthy eating habits. The healthcare sector supported the initiative through health camps at PHCs and Sub-centers, alongside awareness drives via posters. A crucial meeting with representatives of Kisan Mandli, Pani Samiti, and Dudh Mandli emphasized the role of local agricultural and dairy practices in enhancing nutrition.

The activities were well-distributed across the weeks, ensuring a sustained and continuous effort rather than a one-time intervention. Certain weeks, such as Week 2, Week 4, and Week 5, had multiple activities, indicating a concentrated approach to engaging different community groups. The combination of rallies, counseling, recipe competitions, and health camps fostered a holistic, interactive environment for spreading awareness.

After 3 months post data was collected on the following aspects

1. Knowledge of representatives of village institution
2. Dietary practices of the children aged 6 to 24 months.
3. Service utilization by the primary school children (MDM, IFA, Deworming and health check-up)

1. **Knowledge of representatives of village institution**

- **Knowledge of Village Institution Representatives on Infant and Young Child Feeding (IYCF) Practices**

Data is presented in Table 4.25; Post-intervention data collection revealed a notable improvement in the knowledge of village institution representatives regarding Infant and Young Child Feeding (IYCF) practices.

The awareness about early initiation of breastfeeding within one hour of birth increased from 78% before the training to 89% post-traning.

All representatives were familiar with the term colostrum in both pre- and post-assessments. However, knowledge about its importance in boosting immunity and protecting against infections increased from 78% to 81%, with a decline in those who were unsure.

Similarly, an improvement was seen in the understanding of exclusive breastfeeding for six months, with awareness rising from 70% pre-intervention to 81% post-intervention.

The knowledge of the correct age for initiating complementary feeding also showed progress, with 78% identifying "after six months" in the post-assessment, compared to 74% in the pre-assessment.

- **Knowledge of representatives of village institution regarding Anemia**

Table 4.26 presents the information on anemia related aspects The findings revealed that all representatives were familiar with the term anemia both before and after the training. The primary cause identified was inadequate consumption of iron-rich foods (96%), while knowledge about other causes such as frequent malaria episodes (33%), hookworm infestations (41%), and blood loss during menstruation (22% pre vs. 26% post) remained moderate. Awareness of iron absorption inhibitors like tea and coffee saw a slight increase (33% to 37%), while recognition of blood loss during accidents as a cause of anemia remained low (7% pre vs. 11% post).

Table 4.25 - Post training knowledge of representative of village institution regarding Infant Young Child Feeding Practices

Particulars		Pre	%	post	%
Early initiation of the breastmilk	With in 1 hr	21	78%	24	89%
	Don't know	6	22%	3	11%
Familiar to term Colostrum	Yes	27	100%	27	100%
Importance of colostrum	Fights against antibodies/foreign bodies entering inside the body and makes the system immune	21	78%	22	81%
	Don't know	6	22%	5	19%
Periods of exclusive breastfeeding	6 months	19	70%	22	81%
	9 months	1	4%	0	0%
	Don't know	7	19%	5	19%
Correct age of initiation of Complementary feeds	6 months	4	15%	4	15%
	After competition of 6 months	20	74%	21	78%
	Don't' know	3	11%	2	7%
Period of complementary feeding, along with breastfeeding	6 months	4	15%	4	15%
	1 year	1	4%	1	4%
	2 years	20	74%	22	81%
	Don't know	2	7%	0	0%

Table 4.26 – Post training knowledge of representatives of village institution regarding Anemia

Particulars		pre	%	post	%
Familiar to term anemia	Yes	27	100%	27	100%
Causes of anemia	Inadequate consumption of Iron Rich Foods in theDiet	26	96%	26	96%
	Consumption of Iron Rich Foods with inhibitors likeTea and Coffee	9	33%	10	37%
	Excessive blood loss as in menstruation, delivery,hemorrhage	6	22%	7	26%
	Blood loss during accidents	2	7%	3	11%
	Frequent Episodes of Malaria	9	33%	9	33%
	Hookworm Infestations	11	41%	11	41%

	Don’t know	1	4%	0	0%
Signs and symptoms of anemia	Fatigue	21	78%	21	78%
	Weakness	22	81%	23	85%
	Pallor of skin, tongue and nails	21	78%	21	78%
	Shortness of breath	4	15%	4	15%
	Dizziness	20	74%	21	78%
	Brittle and spoon-shaped nails	12	44%	12	44%
	Headaches	9	33%	8	30%
	Fast irregular heartbeat	3	11%	3	11%
	Swelling and soreness of the tongue	5	19%	5	19%
	Tingling sensations in legs	5	19%	5	19%
	Don’t know	2	7%	1	4%
preventive measures for Anemia	Consumption of Iron Rich Food with enhancers anddietary diversity	25	93%	26	96%
	Consume Iron Folic Acid Tablets	25	93%	27	100%
	Prevention of Malaria	3	11%	15	56%
	Cleanliness of house inside and outside	5	19%	5	19%
	Consume Albendazole tablets twice a year	4	15%	8	30%
	Eat Purna Shakti packets	7	26%	7	26%
	Don’t know	2	7%	0	0%
iron rich sources of food	Green leafy vegetables	25	93%	25	93%
	Whole cereals and Pulses	14	52%	15	56%
	Dates	25	93%	25	93%
	Beet	23	85%	23	85%
	Soybean	3	11%	3	11%
	Jaggery	23	85%	24	89%
	Egg/Meat/ Fish	7	26%	10	37%
foods should be consumed with iron rich food	Vitamin C-rich foods- Amla/ lemon/ orange/ guava	19	70%	20	74%
	Don’t know	8	30%	7	26%
foods should not to be consumed with iron rich foods	Tea or coffee	13	48%	14	52%
	Milk and milk products	10	37%	15	56%
	Don’t know	8	30%	7	26%
Beneficiaries of IFA tablet/ syrup	Pregnant mothers	27	100%	27	100%
	Lactating mothers	24	89%	26	96%
	Adolescent girls	27	100%	27	100%
	Children <6 years	22	81%	23	85%
	Women of reproductive age (WRA)	19	70%	19	70%
IFA tablet provided by	ASHA	27	100%	27	100%
	ANM	9	33%	9	33%
	AWW	2	7%	1	4%
	FHW	7	26%	7	26%

Regarding symptoms, participants demonstrated good awareness of fatigue (78%), weakness (85%), pallor of the skin, tongue, and nails (78%), and dizziness (74% pre vs. 78% post). However, less commonly recognized symptoms such as brittle nails (44%), irregular heartbeat (11%), and tingling sensations in the legs (19%) showed no improvement. The knowledge of preventive measures improved in certain aspects, particularly regarding the consumption of Iron-Folic Acid (IFA) tablets, which increased from 93% to 100%. It was interesting to note that awareness of malaria prevention as a strategy for anemia control significantly rose from 11% to 56%, while recognition of the importance of deworming through Albendazole tablets increased from 15% to 30%.

Participants demonstrated a good understanding of iron-rich food sources, with green leafy vegetables (93%), dates (93%), beetroot (85%), and jaggery (89%) being the most commonly identified. Awareness of consuming whole cereals and pulses with iron-rich foods improved slightly from 52% to 56%. The importance of Vitamin C-rich foods (such as amla, lemon, and guava) to enhance iron absorption was recognized by 70% of participants before the session and increased to 74%. However, knowledge of foods that inhibit iron absorption, such as tea, coffee, milk, and dairy products, showed only slight improvements.

The awareness of IFA tablet beneficiaries remained high, with 100% of participants recognizing that pregnant women and adolescent girls should receive supplementation. Awareness regarding lactating mothers (89% pre vs. 96% post) and children under six years (81% pre vs. 85% post) showed minor improvements. While all participants correctly identified ASHA workers as the primary providers of IFA tablets, recognition of other healthcare workers such as ANMs (33%) and FHWs (26%) remained unchanged.

- **Knowledge and practice related to Water, Sanitation, and Hygiene (WASH) practices of village institution representatives**

Table 4.27 demonstrate the handwashing practices of representative of village institution, there was a marked improvement seen in recognizing other essential handwashing moments. The proportion of representatives who reported washing hands after handling children increased from 85% to 100%, and awareness about washing hands before eating rose significantly from 41% to 100%. Additionally, knowledge about handwashing after handling cattle sawed a slight improvement, rising from 59% to 67%.

Table 4.27– Post training knowledge and practice related to Water, Sanitation, and Hygiene (WASH) practices of village institution representatives

Particulars		**pre**		**post**	
		N = 27	**%**	**N = 27**	**%**
Drinking water source at home	Tap water inside house	26	96%	26	96%
	Tap water outside house	1	4%	1	4%
When to wash hands?	After using toilet	27	100%	27	100%
	Before cooking	27	100%	27	100%
	After handling the child	23	85%	27	100%
	After handling cattle	16	59%	18	67%
	Before eating	11	41%	27	100%
How to wash hands	With soap/ash/handwash	27	100%	27	100%

- **Dietary knowledge and practices of village institution representatives.**

Table 4.28 presents the dietary knowledge of the representatives of the village institution, there was a notable improvement in the understanding of a balanced diet. Prior to the training, 93% described a balanced diet as one containing cereals, pulses, dairy products, fruits, vegetables, meat, fish, eggs, and fats. Post-training, this figure increased to 100%. Additionally, the percentage of representatives who understood that a balanced diet refers to the right proportion of food groups to meet all nutrient requirements improved from 26% to 37%.

Knowledge regarding the inclusion of various food groups in a daily diet also saw enhancements. While 100% of participants recognized the need for grains, pulses, and plant-based foods in the diet both before and after training, the awareness of nuts and seeds as essential dietary components increased from 41% to 56%. Similarly, knowledge about dairy consumption improved from 74% to 89%, while understanding of the importance of dark green leafy vegetables (GLVs) rose from 67% to 78%. Awareness of meat, poultry, fish, and eggs in a balanced diet also saw a modest increase, reaching 74% post-training. The most significant change was observed in the recognition of "other fruits" as essential, which improved from 78% to 100%.

When asked about the nutrients required in a daily diet, there was a slight improvement in understanding the need for carbohydrates (from 89% to 93%) and fats (from 78% to 96%), while awareness of proteins, vitamins, and minerals remained at 100%.

The understanding of the consequences of inadequate nutrient intake showed significant progress. While 100% of participants already knew about undernutrition, awareness of overweight and obesity as potential outcomes increased from 70% to 74%. There was also rise in knowledge about the link between nutrient deficiencies and non-communicable diseases (NCDs) like diabetes, cardiovascular diseases, and cancer, from 44% to 89%. The recognition of anemia as a consequence of poor nutrition saw the most remarkable growth, from just 11% to 67%.

Finally, all representatives were familiar with the concept of dietary diversity, defining it as consuming a wide variety of food groups. However, only 11% recognized the importance of including GLVs, fruits, and milk in dietary diversity, and this figure remained unchanged post-training.

Table 4.28 – Post training dietary knowledge and practices of representatives of village institution (pre-post data)

Particulars		pre		pre	
		N=27	%	N=27	%
Aware of different food groups	Yes	27	100%	27	100%
Meaning of healthy diet of balanced diet	A diet that includes Cereals, Pulses, Dairy products, Fruits and Vegetables, egg/fish/meat,oil/ghee	25	93%	27	100%
	A diet that has the right quantity of food groups that can meet all the nutrient requirements	7	26%	10	37%
Different food group that should be included in daily diet	Grains, white roots and tubers, and plantains	27	100%	27	100%
	Pulses (beans, peas and lentils)	27	100%	27	100%
	Nuts and Seeds.	11	41%	15	56%
	Dairy	20	74%	24	89%
	Meat, Poultry and Fish	19	70%	20	74%
	Eggs	19	70%	20	74%
	Dark GLVs	18	67%	21	78%
	Other vitamin A-rich fruits and vegetables	10	37%	10	37%
	Other Vegetables	25	93%	27	100%
	Other Fruits	21	78%	27	100%
nutrients are required in daily diet	Carbohydrates	24	89%	25	93%
	Protein	27	100%	27	100%
	Fat	21	78%	26	96%
	vitamins and minerals	27	100%	27	100%
What happen when nutrients are not consumed in required quantity	Undernutrition	27	100%	27	100%
	Overweight and obesity	19	70%	20	74%
	Different nutrient deficiencies (Vitamins andmineral deficiencies)	14	52%	14	52%
	non-communicable diseases like diabetes,CVD, cancer, etc.	12	44%	24	89%
	Anemia	3	11%	18	67%
Familiar to term diet diversity	Consuming a wide variety of foods and foodgroups	27	100%	27	100%
	Including GLV/fruits/ milk	3	11%	3	11%

- **Knowledge of village institution representatives regarding undernutrition.**

  The findings presented in the Table 4.29 indicates that familiarity with the term "undernutrition" increased from 96% to 100%, ensuring that all representatives could identify the concept after the Training.

  When asked about the meaning of undernutrition, the majority (89%) correctly associated it with low weight for age before training, and this understanding improved to 93% post-training. However, the belief that undernutrition means “inability to work properly” or “weakness” dropped from 59% to 15%.

  Regarding preventive measures for undernutrition, awareness of the importance of regular consumption of a balanced diet increased from 96% to 100%, reinforcing the role of proper nutrition. Additionally, knowledge about utilizing government services for nutrition support improved from 41% to 52%, indicating greater awareness of available resources. However, understanding of maintaining cleanliness as a preventive measure slightly declined from 19% to 7%. Notably, the percentage of those who did not know any preventive measures dropped to 0% post-training, reflecting the overall effectiveness of the awareness sessions.

- **Knowledge of village institution representatives regarding selected government services.**

  As per the Table 4.30, knowledge about the food items available under PDS improved, with recognition of fortified wheat flour increasing from 89% to 93%, oil from 63% to 74%, and iodized salt from 70% to 78%.

  Awareness about the Antyodaya Anna Yojana (AAY) slightly improved from 78% to 81%, and understanding of its benefits increased recognition of the correct benefit (35 kg of food grains per household per month) rose from 26% to 81%, while misconceptions about alternative benefits were eliminated. Similarly, knowledge about the Mid-Day Meal (MDM) scheme and its beneficiaries became more accurate, ensuring that all respondents correctly identified children in primary and upper primary classes as beneficiaries post-training.

  For the Ayushman Bharat PM-JAY scheme, overall awareness remained stable at 96%, but understanding of the scheme’s benefits improved. Before the training, only 15% correctly identified the Rs. 5 lakh annual health cover per family, which increased to 19% post-training.

Table 4.29– Knowledge of representative of village institution regarding undernutrition (pre-post data)

Particulars		pre		post	
		N=27	%	N=27	%
Familiar with term undernutrition	Yes	26	96%	27	100%
	No	1	4%	0	0%
Meaning of undernutrition	Low weight for age	24	89%	25	93%
	Can't work properly, Weakness	16	59%	4	15%
	Being unhealthy	5	19%	0	0%
	Not applicable	1	4%	0	0%
preventive measures for undernutrition	To consume a balanced diet regularly	26	96%	27	100%
	To keep home and village clean	5	19%	2	7%
	To avail the benefits of government services	11	41%	14	52%
	Don't know	1	4%	0	0%

Table 4.30 – Knowledge regarding selected government services (pre-post data)

Particulars		pre		post	
		N = 27	%	N = 27	%
Availability of PDS in village	Yes	27	100%	27	100%
food items are available in PDS	Fortified Wheat	24	89%	25	93%
	Dal	24	89%	24	89%
	Oil	17	63%	20	74%
	Sugar	8	30%	9	33%
	Iodized Salt	19	70%	21	78%
	Don't know	3	11%	0	0%
Known to Antyodaya Anna Yojana (AAY)	Yes	21	78%	22	81%
	No	6	22%	5	19%
Benefits of Antyodaya Anna Yojana (AAY)	The poorest of poor households will receive 35 kg of food grains per household per month	7	26%	22	81%
	The poorest of poor households will receive 10 kg of food grains per household per month	7	26%	0	0%
	Don't know	13	48%	3	11%
	Not applicable	6	22%	2	7%

Known to MDM (mid-day meal) scheme	Yes	27	100%	27	100%
Beneficiaries of MDM	Children studying in Primary and Upper Primary classes	25	93%	27	100%
	Don't know	2	7%	0	0%
Known to Ayushman Bharat PM JAY scheme	Yes	26	96%	26	96%
	No	1	4%	1	4%
Benefits of Ayushman Bharat PM JAY scheme	It provides a cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization across public and private empaneled hospitals in India	4	15%	5	19%
	It provides a cover of Rs. 2 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India	3	11%	0	0%
	It provides a cover of Rs. 10 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India	17	63%	8	30%
	Don’t know	3	11%	14	26%
visited Health and Wellness centre in village	Yes	22	81%	22	81%
	No	5	19%	5	19%
Beneficiaries of IFA tablets	Pregnant women	25	93%	27	100%
	Lactating women	23	85%	27	100%
	Adolescent girls	23	85%	24	89%
	Children <6yr	20	74%	20	74%
	Women of reproductive age	22	81%	22	81%
	Don’t know	6	22%	0	0%
Beneficiaries of Deworming tablets	Pregnant women	13	48%	15	56%
	Lactating women	3	11%	4	15%
	Adolescent girls	3	11%	6	22%
	Children <6yr	22	81%	25	93%
	Women of reproductive age	3	11%	4	15%
	Don’t know	18	67%	2	7%
Beneficiaries of MHM	Pregnant women	1	4%	0	0%
	Lactating women	1	4%	0	0%

	Adolescent girls	1	4%	1	4%
	Women of reproductive age	1	4%	0	0%
	Don’t know	14	52%	26	96%
Beneficiaries of Vit A supplements	Pregnant women	12	44%	12	44%
	Lactating women	1	4%	1	4%
	Adolescent girls	2	7%	2	7%
	Children <6yr	21	78%	22	81%
	Women of reproductive age	2	7%	0	0%
	Don’t know	15	56%	3	11%
Beneficiaries of Immunization	Pregnant women	23	85%	27	100%
	Lactating women	23	85%	23	85%
	Adolescent girls	14	52%	14	52%
	Children <6yr	25	93%	27	100%
	Women of reproductive age	4	15%	4	15%
	Don’t know	5	19%	0	0%
Beneficiaries of health check-up (height and weight)	Pregnant women	25	93%	25	93%
	Lactating women	25	93%	25	93%
	Adolescent girls	17	63%	17	63%
	Children <6yr	24	89%	24	89%
	Women of reproductive age	1	4%	1	4%
	Don’t know	7	26%	7	26%
Beneficiaries of THR	Pregnant women	24	89%	27	100%
	Lactating women	24	89%	27	100%
	Adolescent girls	21	78%	27	100%
	Children <6yr	23	85%	27	100%
	Women of reproductive age	4	15%	0	0%
	Don’t know	8	30%	0	0%
Beneficiaries of counselling session	Pregnant women	23	85%	24	89%
	Lactating women	23	85%	23	85%
	Adolescent girls	19	70%	19	70%
	Children <6yr	10	37%	0	0%
	Women of reproductive age	8	30%	0	0%
	Don’t know	13	48%	0	0%

Awareness of the beneficiaries of Iron and Folic Acid (IFA) tablets improved, with all participants correctly identifying pregnant and lactating women post-training. Similarly, knowledge of deworming tablet beneficiaries increased, particularly for children under six years, rising from 81% to 93%.

On the other hand, knowledge of Vitamin A supplementation beneficiaries improved, as the proportion of those who did not know about its recipients dropped from 56% to 11%.

For immunization programs, awareness increased all of the participants recognized pregnant women and children under six as beneficiaries post-training. However, understanding of immunization for adolescent girls and women of reproductive age remained unchanged.

Knowledge of health check-ups (height and weight monitoring) remained consistent, while awareness of Take-Home Ration (THR) beneficiaries improved, with 100% correctly identifying pregnant women, lactating women, adolescent girls, and children under six years post-training.

- **Knowledge of village institution representatives regarding the Nutri Smart Village (NSV)**

The data showed in the Table 4.31 highlight a significant increase in awareness about the NSV concept, rising from only 4% pre-training to 85% post-training. Understanding of the key components of NSV also improved. Post-training, 52% recognized its goal of creating a hunger-free village, 52% acknowledged the importance of ensuring a balanced diet for every child, and 44% understood the significance of the first 1,000 days of life. Other aspects such as safe drinking water (44%) and proper sanitation and handwashing (37%) were also acknowledged. This shows a positive impact of the training.

Encouragingly, the belief that health and nutrition should be included in the Village Development Plan increased from 74% pre-training to 100% post-training, reflecting a shift in perception towards a more integrated approach to village development.

Table 4.31– Knowledge regarding Nutri Smart Village (NSV) concept and village development plan (pre-post data)

Particulars		pre		post	
		N = 27	%	N = 27	%
Known to NSV concept	Yes	1	4%	23	85%
	No	26	96%	4	15%
What is NSV concept	To make hunger-free village	0	0%	14	52%
	Aware about the importance of First 1000 days	0	0%	12	44%
	Consume at least 5 food groups out of 10 on a regular basis	0	0%	5	19%
	Every child should receive a balanced diet	0	0%	14	52%
	Access to safe drinking water	0	0%	12	44%
	Maintains safe sanitation and hand washing practices	0	0%	10	37%
	Don’t know	1	4%	5	19%
	Not applicable	26	96%	4	15%
health and nutrition aspects should be included in village development plan	Yes	20	74%	27	100%
	No	7	26%	0	0%

2. **Dietary practices of the children aged 6 to 24 months**

❖ Dietary Diversity:

To see the change in dietary practices after 8 weeks intervention, again information was elicited through 24 hours dietary recall method. The results indicated a positive shift in dietary habits. Dairy product consumption also showed an upward trend, increasing from 63% to 69%. However, there was no change in the consumption of Vitamin A-rich fruits and vegetables, which remained extremely low at 1% both before and after. On the other hand, the intake of other fruits and vegetables improved from 64% to 70% post-sensitization. Findings are shown in the Table 4.32

Minimum meal frequency, minimum dietary diversity, minimum adequate diet by the children (6 to 24 months). Findings are shown in the Figure 4.3

In addition to dietary diversity, the study also evaluated whether children were meeting the standards for a minimum acceptable diet (MAD), which includes minimum meal frequency (MMF) and minimum dietary diversity (MDD). The results showed a slight improvement in all aspects. The percentage of children meeting the MMF criteria increased post-sensitization. The MDD saw a good rise from 18% to 24%, indicating improved variety in food intake. However, the proportion of children achieving the MAD remained critically low, with only a minor increase from 3% to 5%.

3. **Service utilization by the primary school children (MDM, IFA, Deworming and health check-up)** Findings are shown in the Figure 4.4

Utilization of key health and nutrition services among students from grades 6 to 8 was conducted before and after the intervention. The findings revealed a notable improvement in service uptake across various categories.

The consumption of Iron and Folic Acid (IFA) tablets increased significantly from 82.91% before the intervention to 93.16% afterward. Similarly, the intake of deworming tablets showed a positive rise, with participation increasing from 80.34% to 85.47% post-intervention.

The number of students regularly consuming Mid-Day Meals (MDM), rose from 81.20% to 95.72% after the intervention.

Table 4.32– Dietary diversity of the children (6 to 24 months) (pre-post data)

Particular	pre		post	
	N=87	%	N=87	%
Grains, roots, tubers	85	98%	87	100%
Legumes and nuts	81	93%	83	95%
Dairy products	55	63%	60	69%
Vit A rich fruit and vegetable	1	1%	1	1%
Other fruit and vegetable	56	64%	61	70%

Figure 4.3 - Minimum meal frequency, minimum dietary diversity, minimum adequate diet by the children (6 to 24 months)

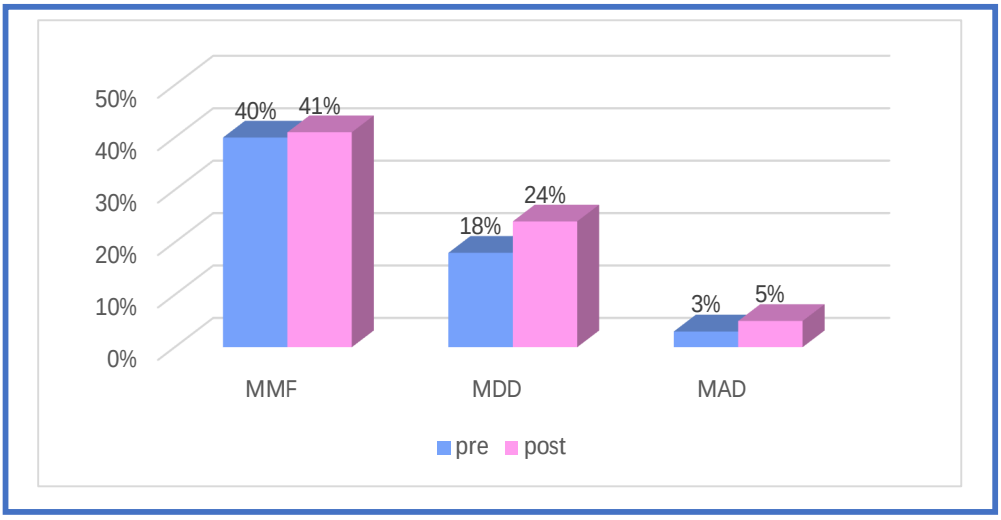
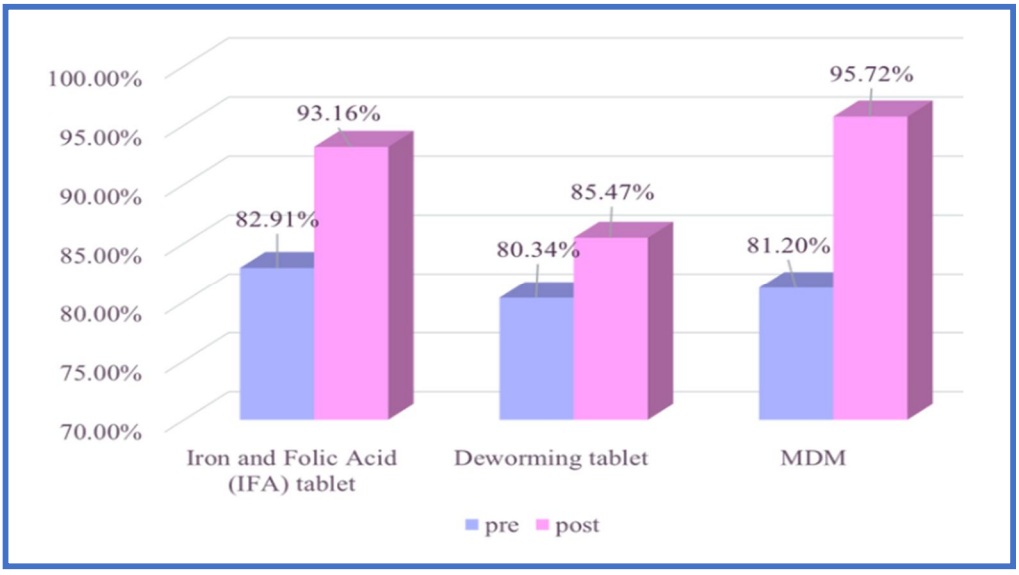


Figure 4.4 - Utilization of the selected services by children (std 6 to 8)



HIGHLIGHTS

- Recognition of NSV concept improved from 4% to 85%, with increased acknowledgment of its role in hunger-free villages, balanced nutrition, and sanitation.
- Awareness of early breastfeeding, exclusive breastfeeding, and complementary feeding saw notable increases among mothers of young children.
- Post-intervention in children aged 6 to 24 months, dairy consumption increased from 63% to 69%, and overall fruit and vegetable intake improved from 64% to 70%, though Vitamin A-rich food consumption remained extremely low at 1%
- The percentage of children meeting Minimum Dietary Diversity (MDD) rose from 18% to 24%, while those achieving Minimum Acceptable Diet (MAD) increased marginally from 3% to 5%.
- Post-intervention, Iron and Folic Acid (IFA) tablet consumption among schoolchildren increased from 82.91% to 93.16%, deworming tablet intake rose from 80.34% to 85.47%, and Mid-Day Meal (MDM) participation surged from 81.20% to 95.72%.
- Overall, 5 activities were carried by ICDS (Anganwadi), 1 activity by gram sanjeevni, 4 activities by government school, 2 activities by PHC,1 activity by gram panchayat and 1 activity by kisan mandli and pani samiti
- During intervention phase, various representatives from different village institutions could conducted at least 1 activity to popularised NSV concept among villagers.
- Total 14 activities were conducted during 8 weeks of intervention.

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DISCUSSION

Undernutrition remains a significant public health concern in India, particularly among infants and young children. The first 1,000 days of life, from conception to a child's second birthday, are crucial for optimal growth and development. Proper nutrition during this period influences cognitive abilities, immune function, and long-term health outcomes. Inadequate dietary intake, poor infant and young child feeding (IYCF) practices, and limited access to nutritious foods contribute to high rates of stunting, wasting, and micronutrient deficiencies. Addressing undernutrition in this critical window through improved maternal nutrition, exclusive breastfeeding, complementary feeding, and micronutrient supplementation can significantly reduce the burden of childhood malnutrition in India.

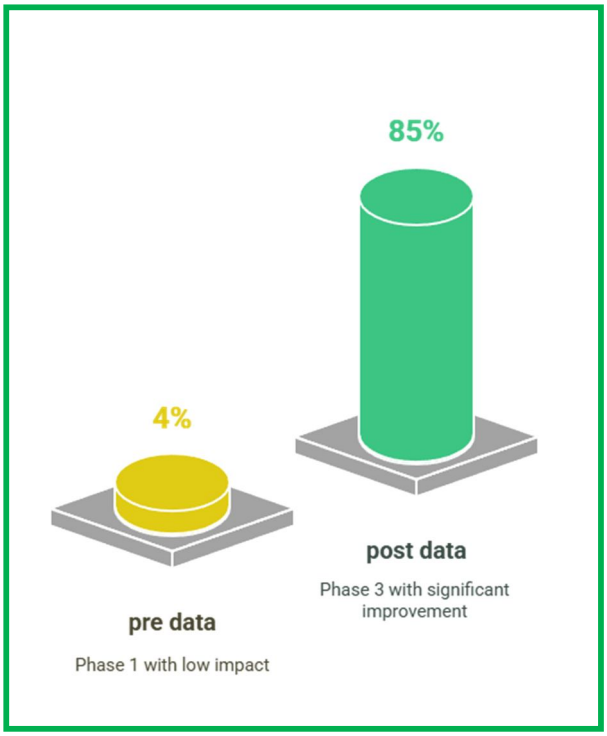
The key highlights of the results are discussed below focusing on dietary practices among children aged 6 to 24 months, including their IYCF practices, knowledge regarding complementary feeding, and utilization of the Balshakti program, consumption patterns of various food groups, assessing the proportion of children meeting the criteria for minimum dietary diversity, meal frequency, and an adequate diet. The nutritional status of young children through anthropometric indicators such as stunting, wasting, and underweight prevalence. In addition to early childhood nutrition, the study explored the nutritional status of upper primary children. The utilization of school-based nutrition and health services was also evaluated, including participation in the Mid-Day Meal (MDM) program, iron and folic acid (IFA) supplementation initiatives.

Knowledge of representatives regarding NSV

Pre intervention the only 4% of the representatives were able to recognized the NSV concept but post intervention recognition of NSV concept improved from 4% to 85% it is shown in the Figure 4.5, increased acknowledgment of its role in hunger-free villages, balanced nutrition, and sanitation.

The current study is the first of its kind conducted in Gujarat on the sensitization of village institutions for Nutri Smart Villages (NSV). Best of our knowledge no such studies were done on this topic in Gujarat.

Figure 4.5 Knowledge of representatives regarding NSV (pre-post data)



Nutritional status of children (6-23 months)

The nutritional status of children aged 6–23 months was evaluated in this study using WHO growth standards 2006. The findings revealed that 46% of the children were stunted. Additionally, 15% of the children were affected by wasting. The prevalence of underweight children was 29%.

Comparing these results with other studies, research conducted by Meshram et. al. (2016) in Surat indicated similar pattern, with 39% of children being stunted, 22.5% suffering from wasting, and 44% categorized as underweight.

Similarly, a study focusing on tribal regions of West Bengal (Stiller et al., 2020) reported a stunting prevalence of 51.9%, wasting in 19% of children, and 49% of children classified as undernourished. These findings highlight significant regional differences in child malnutrition and emphasize the need for targeted nutritional interventions.

Our study found lower prevalence for all the 3 indicators of undernutrition for younger children than studies by Meshram et.al and Stiller et. al. Further, findings of current study were

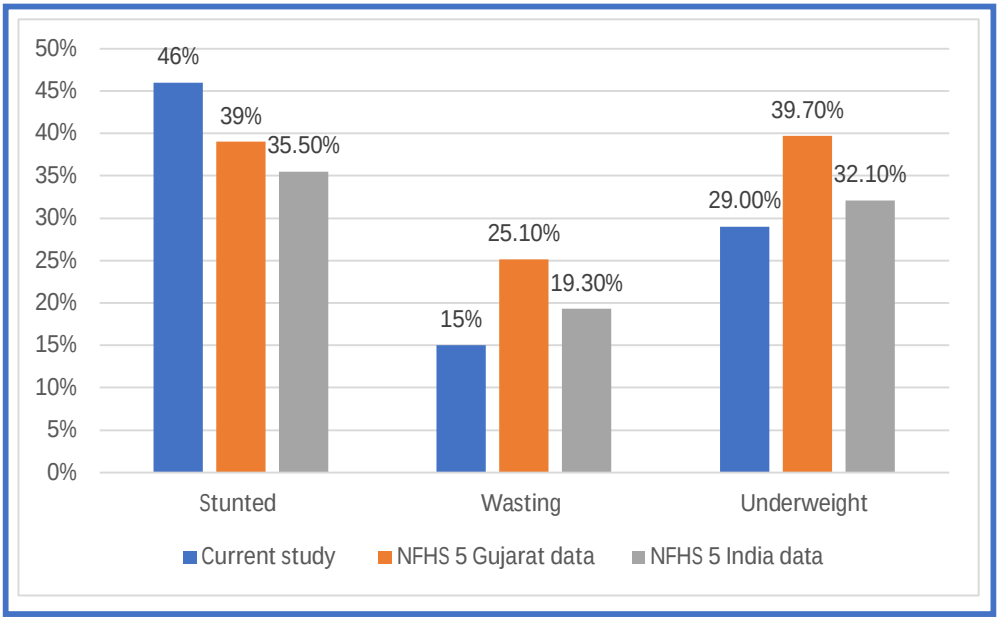
compared with NFHS 5 Gujarat data and India data. It is presented in the Table 4.33 and Figure 4.6.

Stunting, which indicates chronic malnutrition, is higher in the current study at 46% compared to 39% in Gujarat and 35.5% at the national level, suggesting that poor nutrition starts early in life. Wasting is recorded at 15% in the current study, lower than Gujarat's 25.1% and India's 19.3%. Similarly, the prevalence of underweight children in the current study is 29%, which is lower than Gujarat's 39.7% and slightly better than India's 32.1%.

Table 4.33 Comparison of undernutrition indicators with NFHS 5 data

Indicators	Current study (6 to 24 months)	NFHS 5 Gujarat data (under 5 year)	NFHS 5 India data (under 5 year)
Stunted	46%	39%	35.5%
Wasting	15%	25.1%	19.3%
Underweight	29%	39.7%	32.1%

Figure 4.6 – Prevalence of undernutrition – current study and NFHS5



Dietary practices of young children (6-24 months)

The present study, included 87 young children, found that only 18% consumed at least four food groups out of 7 food groups. Pre intervention, the minimum meal frequency was achieved by 40% of children, MDD was achieved by 18% while just 3% met the criteria for a minimum acceptable diet (MAD). Post intervention, MMF was achieved by 41% of the children, MDD was achieved by 24% of the children and MAD was achieved by 5% of the children. Comparatively, research by Chandwani H et al. (2015) reported, with 28.3% of children meeting the minimum dietary diversity (MDD), a significantly higher 95.6% achieving the minimum meal frequency (MMF), and 28.3% receiving a minimum acceptable diet. Which was much higher than the findings of the current study

In line with these findings, Sakka et al. (2016) observed that among children aged 6-23 months, 57.3% met the required meal frequency, 35.3% consumed a diverse diet, and 25.2% had an overall adequate diet. Similarly, Mekonnen et al. (2017) reported that in southern Ethiopia, 27.3% of children in this age group met the dietary diversity standards, while 68.9% adhered to the recommended meal frequency.

Departmental study by Gandhi and Mehta (2020) reported that MMF was found 68.1%, MDD was 38% MAD observed at 30.6% which is higher than the current findings.

Similar study by Gandhi and Thakkur (2021) reported that MMF was achieved by 51% of the children, MDD was achieved by 71% of the children and MAD was achieved by 34% of the children, which is higher than the current findings.

The present study further revealed that grains, roots, and tubers formed the primary component of complementary feeding, being included in the diets of 98% of children. On the other hand, non-dairy animal-source foods were the least consumed. These trends are consistent with the findings of Baye et al. (2013), who highlighted that young children's diets were predominantly cereal- and legume-based, with minimal intake of animal-based foods, fruits, and vegetables.

Mothers' Knowledge and Practices of complementary feeding

Early initiated with breastmilk (EIBF) that is within one hour of the birth, in the current study it was found that only 56% of the mother had done the EIBF.
A study by Gandhi and Thakkur (2021) reported that 67.2% of the children were early initiated with breastmilk that is within one hour of the birth. Which is higher than the current study.

The present study assessed mothers' knowledge and practices regarding complementary feeding. It was observed that 69% of mothers continued breastfeeding while introducing

complementary foods. Similar studies have reported varying figures; for instance, research by Gandhi and Mehta (2020) found that 93.3% of mothers continued breastfeeding alongside complementary feeding, while Gandhi and Patni (2017) indicated that over 80% of mothers followed the same practice. Regarding the timely introduction of solid, semi-solid, or soft foods between 6–8 months of age, this study found a prevalence of 63%. These findings align with those of Kassa et al. (2016), who reported a 72.5% rate of timely initiation of complementary feeding. Additionally, Sinhababu et al. found that 55.7% of infants aged 6–8 months received semi-solid or solid food along with continued breastfeeding. The proportion increased to 93.6% for children aged 9–11 months but declined thereafter.

Utilization of THR-Balshakti

The study also examined the distribution and utilization of the Take-Home Ration (THR) under the Balshakti program. Among the eligible beneficiaries, only 21% received fewer than seven packets in the month preceding the survey. Similar patterns were reported by Gandhi and Mehta in 2020, where 49% of participants received less than seven packets during the previous month. A study conducted by Talati et al. (2016) in three tribal blocks of Gujarat revealed an even higher prevalence, with 60.3% of recipients receiving fewer than seven packets of Balbhog in the past month. These findings highlight significant gaps in the distribution and accessibility of nutritional support programs, emphasizing the need for improved implementation and awareness to ensure adequate nourishment for children.

Nutritional status of upper primary school children

In the present study, 31.62% of adolescents were stunted. The prevalence of thinness in the present study was 35.04%, which is a higher proportion compared to the 16.67% underweight found in Modi et. al. study (2022) on the nutritional status of adolescents in rural areas of Vadodara.

A study by Gandhi and Barodawala (2024) reported that 59% of the children were thin and 21.46% children were stunted. Which is less than the present study.

A study by Patel et al. (2022), found a higher prevalence of stunting (24% in boys and 19% in girls) and wasting (17% in boys and 18% in girls) among adolescents receiving the Mid-Day Meal (MDM) compared to those not receiving it. In contrast, the present study observed 30% stunting, which is higher than the prevalence reported in Patel et al.’s study. Additionally, the

present study found a relatively higher prevalence of thinness (75%) compared to the wasting percentages found in Patel et al. (2022).

Utilization of services (MDM, IFA) by upper primary school children

When comparing the present study with those of Biswas et al. (2023) and Patel & Iyer (2022), there are both similarities and differences in the findings related to Iron and Folic Acid Supplementation (IFS) and the Mid-Day Meal (MDM) program. Biswas et al. (2023) found a relatively low IFS compliance rate of 27.5%, whereas the present study reported a much higher compliance rate of 82.91%. This significant difference could be due to regional variations, differences in the study population, or perhaps more effective program implementation and awareness in the present study area. The factors influencing compliance, such as religion, income, and prior knowledge in Biswas et al.'s study, might also have played a role in the present study, especially if similar variables were examined.

In terms of the Mid-Day Meal (MDM) program, Patel & Iyer (2022) found that 93% of children in rural Vadodara consumed MDM, which is similar to the present study's finding of 81.2% consumption. The slight difference in consumption rates might be due to variations in local factors such as community support, school infrastructure, or differences in program implementation. Patel & Iyer also assessed the impact of Nutrition Health Education on the nutritional status of children, which likely contributed to the higher MDM consumption in their study. If the present study also included health education interventions, it would be insightful to compare how such programs influenced MDM consumption and nutritional outcomes in the study setting.

SUMMARY AND CONCULSION

SUMMARY AND CONCLUSION

The study was approved by the Institutional Ethics Committee for Human Reasearch (IECHR), Faculty of Family and Community Sciences, Maharaja Sayajirao University of Baroda. The ethical approval number is IECHR/FCSc/M.Sc./10/2024/40

The current study was planned with the broad objective to assess the dietary diversity, nutritional practices, and utilization of nutrition and health services among children and mothers in selected village of Vadodara, and to strengthen village level community-based organizations (CBOs) through training and sensitization programs under “Nutri-Smart-Village”.

Specific objectives of the study were

- To assess the profile and knowledge of representative of village institution/committee about nutrition and government schemes about maternal and child health
- To assess the nutritional status, dietary diversity, IYCN and WASH (Water, Sanitation, and Hygiene) practices among mothers of children aged 6 to 24 months
- To evaluate the nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children
- To sensitize representatives of village institutions to develop action plan for their village/villages towards NSV
- To monitor the execution of action plan by village institutions towards developing NSV

The study was divided into 3 phases:

Phase 1: Situational Analysis

Phase 2: Training and sensitization of representatives of Village Institutions

Phase 3: Monitoring the execution of the action plan

Phase 1: Situational Analysis

In Vadodara district, there are a total of eight administrative blocks, out of which the Vadodara block was purposively chosen for the study. Within this block, there are eight Primary Health Centers (PHCs) villages, and one PHC village was selected randomly.

Permissions from concerned authorities were obtained. Key local institutions were identified, including the Dairy Cooperative, Health Department, Integrated Child Development Services (ICDS), Kisan Samiti, Primary School, Pani Samiti, and Non-Governmental Organizations (NGOs).

A total of 27 representatives were enrolled from the 8-village institutions. Eighty-seven mothers of children aged 6 to 24 months who were registered in the Anganwadi were enrolled as well as 117 upper primary children were also enrolled.

Data was collected on the following aspects usings standard tools and techniques

- Profile of village institution representatives (n=27)
    - Demographic and Socio-Economic Profile
    - Participation in Gram Sabha Meetings and Key Discussion Topics
    - Training received on health, nutrition, and community development
- Knowledge of representatives of village institution (n=27)
    - Knowledge regarding infant and young child feeding (IYCF) practices
    - Knowledge of representatives of village institution regarding anemia
    - Knowledge of representatives of village institution regarding WASH (water, sanitation, and hygiene)
    - Dietary knowledge of representatives of village institution
    - Knowledge of representatives of village institution regarding undernutrition
    - Knowledge and practices of village institution representatives regarding unhealthy foods
    - Knowledge of representatives of village institutions regarding selected government services
    - Understanding of the nutri smart village (NSV) concept and village development planning
- Nutritional status and dietary practices of the children aged 6 to 24 months. (n=87)
    - Background information of the children aged 6 to 24 months
    - Anthropometric Measurements and Nutritional Status of Children Aged 6 to 24 Months
    - Dietary diversity among children aged 6 to 24 months
    - Meal Frequency, Dietary Diversity, and Adequate Diet Among Children Aged 6 to 24 Months

- IYCN and WASH practices among mothers of children aged 6 to 24 months. (n=87)
    - Background information of mothers of children aged 6 to 24 months
    - Infant and young child feeding (IYCF) practices among mothers of children aged 6 to 24 months
    - Hygiene practices among mothers of children aged 6 to 24 months
- Selected government services utilized by mother (n=87)
    - Utilization of Integrated Child Development Services ICDS by mothers for children aged 6 to 24 months
- Nutritional status of primary school children (n=117)
    - Demographic profile of children in standards 6 to 8
    - Anthropometric measurements of children (standards 6 to 8)
    - Nutritional status of primary school children
- Service utilization by the primary school children (MDM, IFA, Deworming, health check-up) (n=117)

Phase 2: Training and sensitization of Village Institutions

- Development of Training Module and Handouts
- Sensitization of Village Representatives and Action Plan Development
- Monitoring of the execution of the planned activities

Phase 3: Monitoring the Enabling Environment and barriers towards developing NSV

- Monitored the execution of the planned activities
- Post data was collected on the following aspects
    - Knowledge of representatives of village institution (n=27)
    - Dietary practices of the children aged 6 to 24 months. (n=87)
    - Service utilization by the primary school children (MDM, IFA, Deworming and health check-up) (n=117)

Highlights of the findings

Phase 1

- Total 27 representatives from 8 village institutions were enrolled for the study
- Forty-eight percent of village institution representatives were aged 36-45 years.

- Seventy eight percent of representatives of village institution were aware of early breastfeeding initiation, colostrum, and 70% were aware of the correct period of exclusive breastfeeding.
- Ninety six percent correctly identified inadequate iron intake as a cause of anemia, but only 33% knew about absorption inhibitors.
- Ninety three percent correctly defined a balanced diet and showed strong dietary knowledge.
- Eighty nine percent linked undernutrition to low weight-for-age, while 59% associated it with weakness.
- Ninety three percent identified unhealthy foods but also admitted to buying junk food.
- Ninety six percent were unaware of the Nutri Smart Village (NSV) concept, and only 19% participated in village action planning.
- Out of 87 mothers of young children enrolled, 56% of mothers-initiated breastfeeding within an hour, and 86% practiced exclusive breastfeeding for six months.
- Ninety-seven percent of mothers used soap for handwashing, while 3% relied on ash or other alternatives.
- Seventy six percent of children consumed Bal Shakti, but only 34% had it regularly.
- Forty percent children received minimum meal frequency, 18% children received minimum dietary diversity and only 3% children receive minimum adequate diet.
- In children age 6 to 24 months, it was found that 46% were stunted, 15% were wasted and 29% were severely underweight.
- Out of 117 primary school children, 31.62% of children were stunted, and 35.04% were categorized as thin.
- Regarding services utilization, 82.91% children consumed IFA tablets, 80.34% took deworming tablets, and 100% had undergone health check-ups. MDM consumption was 81.6%

Phase 2

- A structured 1-day training program was conducted to implement the Nutri-Smart Village (NSV) initiative.
- A comprehensive training module and handouts were developed in Gujarati for easy understanding.

- Training covered topics such as balanced diet, dietary diversity, WASH (Water, Sanitation, and Hygiene), anemia prevention, infant and young child nutrition (IYCN), malnutrition, and government nutrition schemes.
- Village representatives were sensitized to develop an 8-week action plan for nutrition awareness and intervention to carry out various activities like -
    - Organizing rallies on adolescent nutrition
    - Creating wall paintings to spread awareness
    - Conducting nutrition awareness campaigns
    - Recipes demonstration and competition between adolescents' girls
    - Setting up Nutrition Corners
    - Conducting educational sessions on healthy nutrition practices
    - Holding village meetings focused on nutrition promotion
    - Integrating nutrition policies into community development plans
    - Arranging health check-up camps
    - Conducting anemia screening to assess community health
    - Conducting health and nutrition counseling sessions for community members
    - Hosting discussions on household nutrition and food security
    - Promoting village-wide engagement in nutrition improvement initiatives
    - Facilitating rallies and awareness campaigns to strengthen the Nutri-Smart Village approach

Phase 3

- Recognition of NSV concept improved from 4% to 85%, with increased acknowledgment of its role in hunger-free villages, balanced nutrition, and sanitation.
- Awareness of early breastfeeding, exclusive breastfeeding, and complementary feeding saw notable increases among mothers of young children.
- Post-intervention in children aged 6 to 24 months, dairy consumption increased from 63% to 69%, and overall fruit and vegetable intake improved from 64% to 70%, though Vitamin A-rich food consumption remained extremely low at 1%
- The percentage of children meeting Minimum Dietary Diversity (MDD) rose from 18% to 24%, while those achieving Minimum Acceptable Diet (MAD) increased marginally from 3% to 5%.
- Post-intervention, Iron and Folic Acid (IFA) tablet consumption among schoolchildren increased from 82.91% to 93.16%, deworming tablet intake rose from

80.34% to 85.47%, and Mid-Day Meal (MDM) participation surged from 81.20% to 95.72%.

- Overall, 5 activities were done by ICDS (Anganwadi), 1 activity by gram sanjeevni, 4 activities by government school, 2 activities by PHC,1 activity by gram panchayat and 1 activity by kisan mandli and pani samiti
- During intervention phase, various representatives from different village institutions could conducted at least 1 activity to popularised NSV concept among villagers.
- Total 14 activities were conducted during 8 weeks of intervention.

Enabling environment and barriers towards developing NSV

The development of a Nutri-Smart Village (NSV) concept requires a well-functioning governance system, active community participation, and strong institutional support.

Though elected PRI members were not there in the village, the structured department branch like health staff, ICDS staff and school staff facilitated majority of the community level activities towards NSV as per the action plan. Community mobilization and participation was found to be satisfactory. This was the only enabling environment observed in the current study

However, in this case, some barriers have hindered the smooth implementation of NSV initiatives.

- One of the significant challenges was due to the non-conduct of local PRI elections for more than 1.5 years, the local governance structure was dismantled, leaving the village without an elected Sarpanch. This lack of leadership has severely impacted decision-making processes, and the overall coordination of nutrition and health programs. Without a governing body, no village-level policies and village development plan could not be developed effectively, and the community lacked a formal platform to voice their needs and concerns.
- The Gram Sabha meetings, which play a vital role in community awareness activities, could not function as expected, further weakening the village's progress towards becoming a Nutri-Smart Village

CONCLUSION

The current study is the first of its kind conducted in Gujarat on sensitizing village institutions for the Nutri Smart Village (NSV) initiative. The intervention successfully engaged key community stakeholders, including Anganwadi centers, Gram Panchayats, schools, healthcare institutions, and farmer groups, creating a multi-sectoral approach toward improving nutrition and health awareness at community level. The study facilitated shift in dietary diversity among children aged 6 to 24 months, with increased dairy and fruit and vegetable consumption. However, challenges remain, particularly in improving the intake of Vitamin A-rich foods and achieving Minimum Acceptable Diet (MAD) standards. Additionally, the utilization of essential health services among schoolchildren, such as Iron and Folic Acid supplementation, deworming, and participation in Mid-Day Meals, improved post-intervention, indicating the effectiveness of targeted sensitization efforts. The structured approach, involving awareness activities, counseling sessions, nutrition corners, rallies, and health camps, fostered a holistic and sustainable model for nutrition interventions. The involvement of multiple local village institutions strengthened community participation, highlighting the importance of a collaborative approach to address malnutrition to achieve SDG goal 1,3.

RECOMMENDATIONS

RECOMMENDATION

From the study findings, it can be recommended that; promotion of Nutri Smart Village (NSV) approach focusing on developing nutri capacity building and nutri environment building through various institutions can improve the dietary diversity of young children, nutritional practices of the people and WASH practices which will overall help in combating malnutrition. It is recommended that study should be carried out with longer duration of intervention period to see the outcome of the approach.

The local PRI body should be sensitized for developing village development plan inclusive of improvement of nutrition and health activities at the village.

POLICY IMPLICATIONS

Data generated from the current study may help in planning the strategies for community level activities to be carried out by local village institutions towards Suposhit Gram Panchayat launched in last week of Dec 2024 by WCD.

LIMITATIONS OF THE STUDY

The study is confined to one village of the selected district and time bound period of intervention.

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APPENDICES

APPENDIX I

Ethical Certificate

सत्यं शिवं सुन्दरम्
Estd. 1949

Institutional Ethics Committee for Human Research (IECHR)

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

Ethical Compliance Certificate 2024-2025

This is to certify Ms. Tanvi Kotadia study titled; "Strengthening Village Institutions for Developing "Nutri-Smart-Village" in Selected Village of Vadodara Rural Block of Vadodara District." from Department of Foods and Nutrition has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number IECHR/FCSc/M.Sc./10/2024/40.

Komal

Prof. Komal Chauhan
Member Secretary
IECHR

Prof. Mini Sheth
Chairperson
IECHR

Chair Person
IECHR
Faculty of Family & Community Sciences
The Maharaja Sayajirao University of Baroda

APPENDIX II

Permission Letter

સોખડા ગ્રામ પંચાયત

તા.જી. – વડોદરા ,પિન કોડ– ૩૯૧૭૪૫

તા:- ૨૮/૧૦/૨૦૨૪

પ્રતિશ્રી,

ડૉ. હેમાંગીની ગાંધી

ડિપાર્ટમેન્ટ ઓફ ફુડ્સ & ન્યુટ્રીશન

ધ એમ એસ. યુનિવર્સિટી ઓફ બરોડા

સોખડા ગ્રામ પંચાયત • તા. જી. વડોદરા.

વિષય:- સોખડા ગામમાં ન્યુટ્રી કમ્યુનિટી પ્રોજેક્ટ

ઈન્ટરવેન્શન અંગેની મંજુરી બાબત.

ઉપરોક્ત વિષયનાં અનુસંધાનમાં

જણાવવાનું કે આપશ્રીનાં મળેલ પત્ર તારીખ:- ૨૮/૧૦/૨૪નાં

અનુસંધાને આપનાં ડિપાર્ટમેન્ટની M.S.C. પી.એચ.ડી. નાં

વિદ્યાર્થીની કુ. તન્વી કોરડીયાને સંશોધનનાં ભાગરૂપે સોખડા

ગામમાં આવેલ આંગણવાડી, પ્રાથમિક શાળા અને આરોગ્ય

કેન્દ્ર માં વિવિધ પ્રવૃતિ કરવા તેમજ માહિતી એકઠી કરવા

તેનો સમયગાળો ઓક્ટોબર ૨૦૨૪ થી માર્ચ ૨૦૨૫ સુધીનાં

સમય સુધી મંજુરી માટેની માંગણી કરવામાં આવેલ છે

જેનાં અનુસંધાને આપશ્રી દ્વારા જે કોઈ પ્રવૃતિ કરવામાં

આવનાર છે તે માટે સોખડા પ્રાથમિક શાળાની, આંગણવાડી

તથા આરોગ્ય કેન્દ્રની મંજુરી લઈ ઉપરોક્ત વિષયની

કોઈ પણ પ્રવૃતિ કરવામાં આવે તેમાં ગ્રામ પંચાયતને

કોઈ પણ પ્રકારનો વાંધો કે વિરોધ નથી. જે આપશ્રીને જાણ

સારુ.

તલાટી કમ મંત્રીશ્રી

સોખડા ગ્રામ પંચાયત

તા.જી. વડોદરા.

Dept. of Foods & Nutrition
Faculty of Family & Community Sciences
The M. S. University of Baroda
Vadodara - 390 002.

24/10/24

પ્રતિ
તલાટી સાહેબ શ્રી
ગામ રનોડા
જિ. વડોદરા

વિષય: રનોડા ગામમાં ન્યુટ્રીશનલ વિલેજ પ્રોજેક્ટ અંતર્ગત મંજૂરી બાબત

મા. સાહેબ શ્રી.

કુ. નન્દી કોટડીયા, અમારા M.Sc ની વિદ્યાર્થીની તેમના M.Sc. સંશોધન માટે રનોડા ગામ માં તેમના વિલેજ ની પસંદગી માન્ય કરનાર છે. રનોડા વિલેજ ની પસંદગી માર્ગદર્શન માં કરીને કરેલ છે. ડૉ. દીદીની પંચાયત ના માર્ગદર્શન માં કરીને કરેલ છે.

ડૉ. દીદીની પંચાયત ના ભાગ રૂપે કુ. નન્દી ન્યુટ્રીશનલ વિલેજ પ્રોજેક્ટ ના ભાગ રૂપે કુ. નન્દી આરોગ્ય કેન્દ્ર આંગણવાડીઓ માં, પ્રા. શાળા માં તેમજ આરોગ્યમંદિર માં કાર્યકર્તાઓ સાથે મુલાકાત કરશે. ત્યારબાદ ગામમાં પીવાના પાણી ના નમૂના, માતાઓ ના ખોરાક સાથે સાથે પોષણ સ્તર, સંશોધન લેવાશે તેમજ સમુદાય માં વિવિધ પોષણ વિષયક જાગૃતિ કરશે અને ગામમાંથી સ્વચ્છતા પીવાના પાણી સ્વચ્છતા પંચાયત ના આરોગ્ય પીવાના પાણી રૂપે વિવિધ સુવિધાઓ ઉપલબ્ધ કરાવશે. સંશોધન ના પરિણામો અહેવાલ સ્વરૂપે આપને ... આપવામાં આવશે.

આથી આપ શ્રી ને નમ્ર વિનંતી કે રનોડા ગામને ન્યુટ્રીશનલ વિલેજ બનાવવાના પ્રયાસ માટે ઉપરોક્ત સંશોધન માટે મંજૂરી આપશોજી.
ન્યુટ્રીશનલ વિલેજ બનાવવાના પ્રયાસ માટે સહકાર આપવા વિનંતી.

આપની વિશ્વાસુ
H.J. Gandhi
(ડૉ. હેમાંગના ગાંધી)
સંશોધન માર્ગદર્શક

H.J. Gandhi

Dept. of Foods & Nutrition
Faculty of Family & Community Sciences
The M. S. University of Baroda
Vadodara - 390 002.

APENDIX III

Consent Form

Consent form for representatives of village institution

DEPARTMENT OF FOODS AND NUTRITION
FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA 390002 – INDIA

સંમતિ પત્ર

સ્નેહી શ્રી,

ફૂડ્સ અને ન્યુટ્રિશન વિભાગ, ફેકલ્ટી ઓફ ફેમિલી અને કોમ્યુનિટી સાયન્સિસ, **MSU** દ્વારા "વડોદરા જિલ્લાની વડોદરા ગ્રામ્ય બ્લોકની પસંદગી કરેલ ગામોમાં 'ન્યુટ્રી-સ્માર્ટ-વિલેજ' વિકસાવવા માટે ગામ સંસ્થાઓને મજબૂત બનાવવાનો" અભ્યાસ હાથ ધરવામાં આવી રહ્યો છે.

તેના એક ભાગરૂપે, ગામ સંસ્થાના પ્રતિનિધિ પાસેથી માહિતી લેવામાં ની છે.

ખોરાક અને પોષણના મૌલિક પાસાઓ, સરકારી યોજનાઓ વિશેની જાગૃતિ અને ગામ વિકાસ યોજના વિશેની માહિતી જોઈએ છે. બેઝલાઇન સર્વે પછી, અમે તમારા ગામની ગામ સંસ્થાઓના પ્રતિનિધિઓને અમે વધુ માહિતી આપવા માંગીએ છીએ

આ અભ્યાસ માટે તમારું સહકાર અને ભાગીદારી જરૂરી છે| કૃપા કરીને આ માટે સમ્મતિ આપવા માટે વિનંતી છે|

આમાં તમારો સમય આશરે **10-15** મિનિટ લાગશે. જો તમે કોઈ જવાબ નથી આપવા ઈચ્છતા, તો તમે અભ્યાસના કોઈપણ સમયે તમે ના કહી શકો. આ માહિતી ગોપનીય રાખવામાં આવશે અને માત્ર સંશોધન માટે જ ઉપયોગમાં લેવામાં આવશે. જો તમને કોઈ પ્રશ્ન હોય, તો તમે નીચે દર્શાવેલા ફોન નંબરો પર સંપર્ક કરી શકો છો|

અભ્યાસ નિરીક્ષક:
ડૉ. હેમાંગીની ગાંધી
ફોન નંબર - **9824320554**

સંશોધન વિદ્યાર્થી:
તન્વી કોટાડિયા
ફોન નંબર - **6378633238**

સભ્ય સચિવ
ઇન્સ્ટીટ્યુશનલ એથિકલ સમિતિ ફેક્લટી ઓફ ફેમિલી એન્ડ કમ્યુનિટી સાઇનસેજ
પ્રોફ. કોમલ ચૌહાણ
ફોન નંબર – **9898790340**

હું, _____ ગામ સંસ્થાના પ્રતિનિધિ, અભ્યાસ માટે માહિતી આપવા માટે સમ્મતિ આપું છું.

નામ અને સહી _____

તારીખ _____ સ્થળ _____

Consent form for mothers of children 6 to 24 months

DEPARTMENT OF FOODS AND NUTRITION
FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA 390002 – INDIA

સંમતિ પત્ર

સહ સ્નેહ,

ફૂડ્સ અને ન્યુટ્રિશન વિભાગ, ફેકલ્ટી ઓફ ફેમિલી અને કોમ્યુનિટી સાયન્સિસ, **MSU** દ્વારા "વડોદરા જિલ્લાની વડોદરા ગ્રામ્ય બ્લોકની પસંદગી કરેલ ગામોમાં 'ન્યુટ્રી-સ્માર્ટ-વિલેજ' વિકસાવવા માટે ગામ સંસ્થાઓને મજબૂત બનાવવાનો" અભ્યાસ હાથ ધરવામાં આવી રહ્યો છે. આ અભ્યાસના ભાગરૂપે, અમે **6** થી **36** મહિના વયના બાળકોની માતાઓને આ અભ્યાસમાં જોડવા માંગીએ છીએ. અમે બાળકોની ઉંચાઈ, વજન, **MUAC** (મિડ-આપર આર્મ સર્કમફરન્સ), આહારની વિવિધતા, **WASH** (જળ, સ્વચ્છતા અને આરોગ્ય) અને **IYCF** (શિશુ અને નાનું બાળક ખોરાક) પ્રથાઓ અંગેની માહિતી મેળવશું.

આ અભ્યાસમાં **15-20** મિનિટનો સમય લાગશે. જો તમે કોઈ પ્રશ્નનો જવાબ નથી આપવા ઇચ્છતા, તો તમે અભ્યાસના કોઈપણ સમયે ઇનકાર કરી શકો છો. આ માહિતી ગોપનીય રહેશે અને માત્ર સંશોધન હેતુ માટે જ ઉપયોગમાં લેવામાં આવશે. જો તમને કોઈ પ્રશ્ન હોય, તો તમે નીચે દર્શાવેલા ફોન નંબર પર સંપર્ક કરી શકો છો.

કૃપા કરીને આ અભ્યાસ માટે સંમતિ આપવા વિનંતી છે.

અભ્યાસ નિરીક્ષક:
ડૉ. હેમાંગીની ગાંધી
ફોન નંબર - **9824320554**

સંશોધન વિદ્યાર્થી:
તન્વી કોટાડિયા
ફોન નંબર -**6378633238**

સભ્ય સચિવ
ઇન્સ્ટીટ્યુશનલ એથિકલ સમિતિ ફેક્લટી ઓફ ફેમિલી એન્ડ કમ્યુનિટી સાઇનસેજ
પ્રોફ. કોમલ ચૌહાણ
ફોન નંબર - **9898790340**

હું _____ મારા બાળક _____ની માતા, આ અભ્યાસ માટે માહિતી આપવા માટે સંમતિ આપું છું.

માતાની સહી/ અંગઠાનો છાપ _____

તારીખ _____ સ્થળ _____

Consent form for the parents of children of primary school

DEPARTMENT OF FOODS AND NUTRITION
FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA 390002 – INDIA

સૂચિત સંમતિ પત્ર

સ્નેહી શ્રી,

ફૂડ્સ અને ન્યુટ્રિશન વિભાગ, ફેકલ્ટી ઓફ ફેમિલી અને કોમ્યુનિટી સાયન્સિસ, **MSU** દ્વારા "વડોદરા જિલ્લાની વડોદરા ગ્રામ્ય બ્લોકની પસંદગી કરેલ ગામોમાં 'ન્યુટ્રી-સ્માર્ટ-વિલેજ' વિકસાવવા માટે ગામ સંસ્થાઓને મજબૂત બનાવવાનો" અભ્યાસ હાથ ધરવામાં આવી રહ્યો છે. આ અભ્યાસના ભાગરૂપે, તમારા બાળકની ઉંચાઈ, વજન માપવામાં આવશે અને મધ્ય ભોજન અને લોહા તત્વ ગોળીઓ અંગેની તેમની પ્રતિસાદ લેવામાં આવશે |

આ અભ્યાસમાં **10-15** મિનિટનો સમય લાગશે. જો તમારું બાળક કોઈ પ્રશ્નનો જવાબ નથી આપવા માંગતું, તો તે અભ્યાસના કોઈપણ સમયે ઇનકાર કરી શકે છે| આ માહિતી ગોપનીય રહેશે અને માત્ર સંશોધન હેતુઓ માટે જ ઉપયોગમાં લેવામાં આવશે. જો તમને કોઈ પ્રશ્ન હોય, તો તમે નીચેના નંબર પર સંપર્ક કરી શકો છો |

કૃપા કરીને આ અભ્યાસમાં તમારું બાળક ભાગ લઈ શકે તેની માટે સંમતિ આપશો|

અભ્યાસ નિરીક્ષક:
ડૉ. હેમાંગીની ગાંધી
ફોન નંબર - **9824320554**

સંશોધન વિદ્યાર્થી:
તન્વી કોટાડિયા
ફોન નંબર - **6378633238**

સભ્ય સચિવ
ઇન્સ્ટીટ્યુશનલ એથિકલ સમિતિ ફેક્લટી ઓફ ફેમિલી એન્ડ કમ્યુનિટી સાઇનસેજ
પ્રોફ. કોમલ ચૌહાણ
ફોન નંબર - **9898790340**

હું _____ મારા બાળક _____ના વાલીઓ અભ્યાસ માટે ભાગ લેવા માટે સંમતિ આપું છું|

વાલિની સહી/ અંગઠાનો છાપ _____

તારીખ _____ સ્થળ _____

APPENDIX IV

Questionnaires
Pre & Post Questionnaire for representatives of village institution

Profile and Knowledge of representatives of village institutions

Date: _____
Name of the Respondent: _____
Which village institution do you represent?

- Gram Sanjivni
- Village Development Committee
- Kisan Group
- PRI Members
- Dairy Cooperative
- Primary School
- Health staff - ASHA, PHC MO
- ICDS staff - Anganwadi worker, ANM
- RKSK peer educator
- SHG representative/ Social action committee representative
- School monitoring committee
- Any other specify

Profile of representatives of village institution			
Sr. no..	**Questions**	**Choose from responses/ Write responses**	**Write code**
1.	Age आयु:		
2.	Occupation पेशा:		
3.	Religion धर्म:	1. Hindu 2. Muslim 3. Other: _____	
4.	Caste जाति:	1. General 2. SC 3. ST 4. OBC	
5.	Economic category आर्थिक श्रेणी:	1. APL 2. BPL	
6.	Marital Status वैवाहिक स्थिति:	1. Married 2. Unmarried 3. Widow 4. Other (specify)	
7.	Position/designation in village institution ग्राम संस्थान में पद/पदनाम:		

8.	What is your role? आपकी भूमिका क्या है?		
9.	Number of members in the Village institution that you represent. आप जिस ग्राम संस्थान का प्रतिनिधित्व करते हैं उसमें सदस्यों की संख्या:		
10.	Do you attend Gram Sabha meetings? क्या आप ग्राम सभा बैठकों में भाग लेते हैं?	1.Yes 2.No	
11.	If yes what topics are discussed in Gram Sabha meetings? यदि हां, तो ग्राम सभा बैठकों में किन विषयों पर चर्चा की जाती है?	1. Agriculture 2. Village development 3. Water 4. Drainage 5. Toilet 6. Bio gas 7. Health 8. Nutrition 9. Anganwadi/ school • कृषि • गांव विकास • जल • निकासी • शौचालय • बायोगैस • स्वास्थ्य • पोषण • आंगनवाड़ी/विद्यालय	
12.	Have you received any training related to health, nutrition, or community development? क्या आपने स्वास्थ्य, पोषण, या सामुदायिक विकास से संबंधित कोई प्रशिक्षण प्राप्त किया है?	1.Yes 2.No	

Knowledge of representatives of village institution			
	About IYCN		
Sr. No.	**Questions**	**Choose from responses/ Write responses**	**Write code**
1.	When should breastfeeding be initiated after birth? जन्म के बाद स्तनपान कब शुरू किया जाना चाहिए**?**	1. Within 1 hr 2. After 1 hr 3. Any other specify 0. Don't know **1. 1** घंटे के भीतर	

		2. 1 घंटे के बाद **3.** कोई अन्य (विशेष उल्लेख करें) **0.**पता नहीं	
2.	Do you know about colostrum which is yellowish in colour? **क्या आप पीले रंग के कोलोस्ट्रम के बारे में जानते हैं?**	1.Yes 2. No	
3.	If yes, what is its importance? यदि हां, तो इसका महत्व क्या है?	1. Fights against antibodies/foreign bodies entering inside the body and makes the system immune 2. Makes the baby ill 3. Any other specify 0. Don't know 1. **शरीर में प्रवेश करने वाले एंटीबॉडी/विदेशी पदार्थों से लड़ता है और प्रतिरक्षा प्रणाली को मजबूत करता है** 2. **यह बच्चे को बीमार करता है** 3. **कोई अन्य (विशेष उल्लेख करें)** 0.**पता नहीं**	
4.	Exclusive breastfeeding should be done up to? **विशेष रूप से स्तनपान कितने समय तक किया जाना चाहिए?**	1. 3 months 2. 6 months 3. 9 months 4. Any other specify 0. Don't know 1. 3 **महीने** 2. 6 **महीने** 3. 9 **महीने** 4. **कोई अन्य (विशेष उल्लेख करें)** 0 **पता नहीं**	
5.	At what age complementary foods should be initiated? पूरक खाद्य पदार्थ कब शुरू किए जाने चाहिए?	1. 3 months 2. 6 months 3. After completion of 6 months 4. Any other specify 0. Don't know 1. 3 महीने 2. 6 महीने 3. 6 महीने पूरा होने के बाद 4. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
6.	Along with complementary feeding, continued breastfeeding	1. 6 months 2. 1 year 3. 2 years 4. Any other specify 0. Don't know	

	should be done till what age? पूरक आहार के साथ स्तनपान कितनी उम्र तक जारी रहना चाहिए?	1. 6 **महीने** 2. 1 **वर्ष** 3. 2 **वर्ष** 4. **कोई अन्य (विशेष उल्लेख करें)** 0 **पता नहीं**	
Knowledge about Anemia			
7.	Have you heard about the term anemia? क्या आपने एनीमिया शब्द के बारे में सुना है?	1. Yes 2. No	
8.	If yes, then what is anemia? **यदि हां, तो एनीमिया क्या है?**	1. Low hemoglobin levels in the blood 2. Paleness of eyes, nails, tongue 3. Weakness 4. Any other 1. रक्त में कम हीमोग्लोबिन स्तर 2. आंखों, नाखूनों, जीभ की पीलापन 3. कमजोरी 4. कोई अन्य (विशेष उल्लेख करें)	
9.	What are the causes of anemia? ***(Probe and read out the options tomake them understand)*** एनीमिया के कारण क्या हैं?	1. Inadequate consumption of Iron Rich Foods in theDiet 2. Consumption of Iron Rich Foods with inhibitors likeTea and Coffee 3. Excessive blood loss as in menstruation, delivery,hemorrhage 4. Blood loss during accidents 5. Frequent Episodes of Malaria 6. Hookworm Infestations 7. Any other specify 0Don't know 1. आहार में लोहे से भरपूर खाद्य पदार्थों का अपर्याप्त सेवन 2. चाय और कॉफी जैसे अवरोधकों के साथ लोहे से भरपूर खाद्य पदार्थों का सेवन 3. मासिक धर्म, प्रसव या रक्तस्राव के दौरान अत्यधिक रक्त हानि 4. दुर्घटनाओं के दौरान रक्त हानि 5. मलेरिया के बार-बार प्रकोप 6. हुकवर्म संक्रमण 7. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
10.	What are the signs and symptomsof anemia? ***(Probe and read out the options tomake them understand)*** एनीमिया के लक्षण और संकेत क्या हैं?	1. Fatigue 2. Weakness 3. Pallor of skin, tongue and nails 4. Shortness of breath 5. Dizziness 6. Brittle and spoon-shaped nails	

		7. Headaches 8. Fast irregular heartbeat 9. Swelling and soreness of the tongue 10. Cold hands and feet 11. Tingling sensations in legs 12. Any other specify 0Don't know 1. थकान 2. कमजोरी 3. त्वचा, जीभ और नाखूनों का पीलापन 4. सांस की कमी 5. चक्कर आना 6. नाजुक और चम्मच के आकार के नाखून 7. सिरदर्द 8. तेज, अनियमित दिल की धड़कन 9. जीभ की सूजन और खराश 10.ठंडे हाथ और पैर 11.पैरों में झनझनाहट 12.कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
11.	What are the preventive measures for Anemia? ***(Probe and read out the options to make them understand)*** एनीमिया से बचाव के उपाय क्या हैं?	1. Consumption of Iron Rich Food with enhancers anddietary diversity 2. Consume Iron Folic Acid Tablets 3. Prevention of Malaria 4. Cleanliness of house inside and outside 5. Consume Albendazole tablets twice a year 6. Eat Purna Shakti packets 7. Any other specify 0.Don't know 1. लौह-समृद्ध खाद्य पदार्थों का सेवन और आहार विविधता 2. आयरन फोलिक एसिड की गोलियों का सेवन 3. मलेरिया से बचाव 4. घर के अंदर और बाहर की सफाई 5. साल में दो बार एल्बेंडाजोल की गोलियों का सेवन 6. पूर्ण शक्ति पैकेट खाएं 7. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
12.	According to you, which are the iron rich sources of food? आपके अनुसार लौह-समृद्ध खाद्य स्रोत कौन-कौन से हैं?	1. Green leafy vegetables 2. Whole cereals and Pulses 3. Dates 4. Beet 5. Soybean 6. Jaggery 7. Egg/Meat/ Fish	

		8. Any other specify 0. Don't know 1. हरी पत्तेदार सब्जियां 2. साबुत अनाज और दालें 3. खजूर 4. चुकंदर 5. सोयाबीन 6. गुड़ 7. अंडा/मांस/मछली 8. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
13.	Which foods should be consumed that are iron rich? कौन से खाद्य पदार्थ लौह-समृद्ध होने चाहिए?	1. Vitamin C-rich foods- Amla/ lemon/ orange/ guava 2. Any other specify 0. Don't know 1. विटामिन C-समृद्ध खाद्य पदार्थ (आंवला, नींबू, संतरा, अमरूद) 2. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
14.	Which foods should not to be consumed with iron rich foods? कौन से खाद्य पदार्थ लौह-समृद्ध खाद्य पदार्थों के साथ नहीं लेने चाहिए?	1. Tea or coffee 2. Any other specify 0. Don't know 1. चाय या कॉफी 2. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
15.	Who all get IFA syrup/tablet in your village by ASHA/AWW? आपके गांव में आशा/आंगनवाड़ी कार्यकर्ता द्वारा कौन-कौन आईएफए सिरप/गोलियां प्राप्त करते हैं?	1. Pregnant mothers 2. Lactating mothers 3. Adolescent girls 4. Children <6 years 5. Women of reproductive age (WRA) 6. Any other specify 0 Don't know 1. गर्भवती महिलाएं 2. स्तनपान कराने वाली माताएं 3. किशोर लड़कियां 4. 6 साल से कम उम्र के बच्चे 5. प्रजनन आयु की महिलाएं (WRA) 6. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
16.	Who provides the IFA tablet to the beneficiaries? लाभार्थियों को आईएफए गोलियां कौन प्रदान करता है?	1.ASHA 2. ANM 3. AWW 4. FHW 5. Any other specify 1. आशा 2. एएनएम	

		3. आंगनवाड़ी कार्यकर्ता 4. एफएचडब्ल्यू 5. कोई अन्य (विशेष उल्लेख करें)	
17.	Do you know how to consume an IFA tablet? क्या आप जानते हैं कि आईएफए गोली का सेवन कैसे किया जाना चाहिए?	1. Consuming IFA after having Food 2. Not to consume IFA with Tea/coffee 3. Including Citrus fruits like lemon in food 4. Any other specify 0. Don't know 1. भोजन के बाद आईएफए का सेवन 2. चाय/कॉफी के साथ आईएफए का सेवन नहीं करना चाहिए 3. भोजन में नींबू जैसे खट्टे फल शामिल करना चाहिए 4. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
Knowledge about WASH Practices			
18.	What is the drinking water source in your village? आपके गांव में पीने के पानी का स्रोत क्या है?	1. Tap water inside house 2. Tap water outside house 3. Public Tap 4.Tube well/Bore well 1. घर के अंदर नल का पानी 2. घर के बाहर नल का पानी 3. सार्वजनिक नल 4. ट्यूबवेल/बोरवेल	
19.	Most of the people in your village use toilet or go for open defecation? आपके गांव में अधिकांश लोग शौचालय का उपयोग करते हैं या खुले में शौच करते हैं?	1.Public toilet 2.Household toilet 3. Open defecation 1. सार्वजनिक शौचालय 2. घर का शौचालय 3. खुले में शौच	
20.	When do you wash your hands? आप अपने हाथ कब धोते हैं?	1. After using toilet 2. Before cooking 3. After handling the child 4. After handling cattle 5. Any other specify 1. शौचालय के उपयोग के बाद 2. खाना पकाने से पहले 3. बच्चे को संभालने के बाद 4. पशुओं को संभालने के बाद 5. कोई अन्य (विशेष उल्लेख करें)	

21.	How do you wash your hands? आप अपने हाथ कैसे धोते हैं?	1.Only water 2.With soap/ash/handwash 3. No handwashing 1. केवल पानी से 2. साबुन/राख/हैंडवॉश के साथ 3. हाथ नहीं धोते	
Knowledge about Nutrition and diet			
22.	According to you what is good health? आपके अनुसार, अच्छा स्वास्थ्य क्या है?	1. Free from illnesses 2. Can do household chores 3. Any other specify 0. Don't know 1. बीमारियों से मुक्त 2. घरेलू काम करने में सक्षम 3. कोई अन्य (विशेष उल्लेख करें) 0पता नहीं	
23.	What is your type of diet? आपका आहार किस प्रकार का है?	1. Vegetarian 2. Non-Vegetarian 3. Eggetarian **1.** शाकाहारी **2.** मांसाहारी **3.** अंडाहारी	
24.	Are you aware of different food groups? क्या आप विभिन्न खाद्य समूहों के बारे में जानते हैं?	1. Yes 2. No	
25.	If yes, mention the food groups. अगर हां, तो खाद्य समूहों का उल्लेख करें:	1. Grains, white roots and tubers, and plantains 2. Pulses (beans, peas and lentils) 3. Nuts and Seeds. 4. Dairy 5. Meat, Poultry and Fish 6. Eggs 7. Dark GLVs 8. Other vitamin A-rich fruits and vegetables 9. Other Vegetables 10. Other Fruits 1. अनाज, सफेद जड़ें और कंद, और प्लांटेन 2. दालें (बीन्स, मटर और मसूर) 3. नट्स और बीज 4. डेयरी 5. मांस, मुर्गी और मछली 6. अंडे	

		7. गहरे हरे पत्तेदार सब्जियां (जीएलवी) 8. अन्य विटामिन ए-समृद्ध फल और सब्जियां 9. अन्य सब्जियां 10. अन्य फल	
26.	According to you what is a balanced diet or a healthy diet? आपके अनुसार संतुलित आहार या स्वस्थ आहार क्या है?	1. A diet that includes Cereals, Pulses, Dairy products, Fruits and Vegetables, egg/fish/meat, oil/ghee 2. A diet that has the right quantity of food groups that can meet all the nutrient requirements 3. Any other 0. Don't know 1. एक ऐसा आहार जिसमें अनाज, दालें, डेयरी उत्पाद, फल और सब्जियां, अंडा/मछली/मांस, तेल/घी शामिल हो 2. एक ऐसा आहार जिसमें सभी पोषक तत्वों की आवश्यकताओं को पूरा करने के लिए सही मात्रा में खाद्य समूह हों 3. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
27.	Which food groups should be included in your daily diet to have a balanced diet? आपके दैनिक आहार में संतुलित आहार के लिए कौन से खाद्य समूह शामिल होने चाहिए?	1. Grains, white roots and tubers, and plantains 2. Pulses (beans, peas and lentils) 3. Nuts and Seeds. 4. Dairy 5. Meat, Poultry and Fish 6. Eggs 7. Dark GLVs 8. Other vitamin A-rich fruits and vegetables 9. Other Vegetables 10. Other Fruits 1. अनाज, सफेद जड़ें और कंद, और प्लांटेन 2. दालें (बीन्स, मटर और मसूर) 3. नट्स और बीज 4. डेयरी 5. मांस, मुर्गी और मछली 6. अंडे 7. गहरे हरे पत्तेदार सब्जियां 8. अन्य विटामिन ए-समृद्ध फल और सब्जियां 9. अन्य सब्जियां 10. अन्य फल	
28.	Which nutrients are required in your daily diet? आपके दैनिक आहार में कौन से पोषक तत्व आवश्यक हैं?	1. Carbohydrates 2. Protein 3. Fat 4. vitamins and minerals 5. Any other specify 0. Don't know 1. कार्बोहाइड्रेट	

		2. प्रोटीन 3. वसा 4. विटामिन और खनिज 5. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
29.	What will happen if you do not consume nutrients in the required quantity? अगर आप आवश्यक मात्रा में पोषक तत्वों का सेवन नहीं करते हैं तो क्या होगा?	1. Undernutrition 2. Overweight and obesity 3. Different nutrient deficiencies (Vitamins and mineral deficiencies) 4. non-communicable diseases like diabetes, CVD, cancer, etc. 5. Any other specify 0. Don't know 1. कुपोषण 2. अधिक वजन और मोटापा 3. विभिन्न पोषक तत्वों की कमी (विटामिन और खनिजों की कमी) 4. गैर-संचारी रोग जैसे मधुमेह, हृदय रोग, कैंसर आदि 5. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
30.	Do you know what undernutrition is? क्या आप जानते हैं कि कुपोषण क्या है?	1. Yes 2. No	
31.	If yes, what is undernutrition? अगर हां, तो कुपोषण क्या है?	1. Low weight for age 2. Can't work properly, Weakness 3. Being unhealthy 4. Any other specify 0. Don't know 1. आयु के अनुसार कम वजन 2. ठीक से काम नहीं कर सकते, कमजोरी 3. अस्वस्थ होना 4. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	
32.	What are the preventive measures for undernutrition? कुपोषण से बचाव के उपाय क्या हैं?	1. To consume a balanced diet regularly 2. To keep home and village clean 3. To avail the benefits of government services 4. Any other specify 0. Don't know 1. नियमित रूप से संतुलित आहार का सेवन करें 2. घर और गांव को साफ रखें 3. सरकारी सेवाओं का लाभ उठाएं 4. कोई अन्य (विशेष उल्लेख करें) 0 पता नहीं	

33.	Do you think you are healthy? क्या आपको लगता है कि आप स्वस्थ हैं	1. Yes 2. No 0. Don't know	
34.	If not, why do you think that you arenot healthy? अगर नहीं, तो आपको क्यों लगता है कि आप स्वस्थ नहीं हैं?	1. Weight is low as per age-underweight 2. Can't work properly, Weakness 3. Anemic 4. Any other specify 0. Don't know • आयु के अनुसार वजन कम है (अल्पवजन) • ठीक से काम नहीं कर सकते, कमजोरी • एनीमिक • कोई अन्य (विशेष उल्लेख करें) • पता नहीं	
35.	What is unhealthy food? अस्वास्थ्यकर भोजन क्या है?	1. Foods that are rich in essential nutrients 2. Foods that are fresh and minimally processed 3. Foods that contain excessive amounts of added sugar, unhealthy fats, and/or sodium 4. Foods that are organic and locally sourced • भोजन जो आवश्यक पोषक तत्वों से भरपूर हो • भोजन जो ताजा और न्यूनतम संसाधित हो • भोजन जिसमें अतिरिक्त शर्करा, अस्वास्थ्यकर वसा, और/या सोडियम की अत्यधिक मात्रा हो • भोजन जो जैविक और स्थानीय रूप से प्राप्त हो	
36.	Can you name any 3 unhealthy foods? क्या आप 3 अस्वास्थ्यकर खाद्य पदार्थों का नाम बता सकते हैं?		
37.	What meals do you eat in a day? आप दिन में कौन-कौन से भोजन करते हैं?	1.Breakfast 2. Brunch 3. Lunch 4. Supper 5. Dinner 6. Bed time • नाश्ता • ब्रंच • दोपहर का भोजन • दोपहर का नाश्ता • रात का भोजन / डिनर • सोने से पहले का भोजन	
38.	Do you have breakfast every day?	1. Yes 2. No	

	क्या आप हर दिन नाश्ता करते हैं?		
39.	How often do you eat outside home? आप कितनी बार घर के बाहर भोजन करते हैं?	1. Daily 2. 3-4 times a week 3. 2-3 times a week 4. once a week 5. Never • रोज़ाना • सप्ताह में 3-4 बार • सप्ताह में 2-3 बार • सप्ताह में एक बार • कभी नहीं	
40.	Do you buy any junk food/packaged food? क्या आप कोई जंक फूड/पैकेज्ड फूड खरीदते हैं?	1. Yes 2. No	
41.	If yes, what do you prefer to buy? अगर हां, तो आप क्या खरीदना पसंद करते हैं?	1. Packed snacks (Potato/ banana wafers, Kurkure, Gopal) 2. Fried snacks (samosa, bhajiya, kachori, panipuri) 3. Carbonated drinks (ThumsUp,7 Up, Pepsi, Coca-Cola, Limca) 4. Sweets (burfi, laddoo, pastries/ cakes, chocolates, ice cream, biscuits) 5. Any other specify • पैक किए हुए स्नैक्स (आलू/केले के वेफर्स, कर्कुरे, गोपाल) • तले हुए स्नैक्स (समोसा, भजिया, कचौरी, पानीपुरी) • कार्बोनेटेड पेय (थम्सअप, 7अप, पेप्सी, कोका-कोला, लिम्का) • मिठाइयां (बर्फी, लड्डू, पेस्ट्री/केक, चॉकलेट, आइसक्रीम, बिस्कुट) • कोई अन्य (विशेष उल्लेख करें)	
42.	What is diet diversity? आहार विविधता क्या है?	1. Consuming a wide variety of foods and food groups 2. Including GLV/fruits/ milk 3. Any other specify • विभिन्न प्रकार के खाद्य पदार्थों और खाद्य समूहों का सेवन करना • हर दिन एक ही प्रकार के खाद्य पदार्थ खाना • केवल प्रोटीन-समृद्ध खाद्य पदार्थों पर ध्यान केंद्रित करना • आहार से सभी कार्बोहाइड्रेट को समाप्त करना	

Knowledge VI representative on services of various National Programs (ICDS, PDS, PM-POSHAN and Ayushman Bharat- PM JAY)

Knowledge of services under ICDS

Sr. No.	Questions	Choose from responses/ Write responses	Write code

43. From following services, which services are available and to whom?

Services सेवाएं	Pregnant mother गर्भवती मां	Lactating mother स्तनपान कराने वाली मां	Adolescent mother किशोरी मां	Children <6 years 6 साल से कम उम्र के बच्चे	Women of reproductive age (WRA) प्रजनन आयु की महिलाएं (WRA)
1. Iron Folic Acid Supplementation आयरन फोलिक एसिड अनुपूरण					
2. Deworming (Albendazole tablet) डिवार्मिंग (एल्बेंडाजोल) गोली					
3. Menstrual hygiene management - information मासिक धर्म स्वच्छता प्रबंधन					
4.Vitamin A Supplementation विटामिन ए अनुपूरण					
5.Immunization टीकाकरण					
4. Health check-up (weight, height) स्वास्थ्य जांच (वजन, ऊंचाई)					
5. Take Home Ration (Balshakti, Purnashakti, Matrushakti) टेक होम राशन (बालशक्ति, आदि)					
8.Counseling sessions परामर्श सत्र					

	Knowledge of services under PDS		
44.	Do you have PDS in your village? क्या आपके गांव में पीडीएस (सार्वजनिक वितरण प्रणाली) है?	1. Yes 2. No	
45.	If yes, what food items are available in PDS? यदि हाँ, तो पीडीएस (सार्वजनिक वितरण प्रणाली) में कौन-कौन से खाद्य पदार्थ उपलब्ध हैं ?	1. Fortified Rice / फोर्टिफाइड चावल 2. Fortified Wheat / फोर्टिफाइड गेहूं 3. Dal / दाल 4. Oil / तेल 5. Sugar / चीनी 6. Iodized Salt / आयोडीन युक्त नमक 7. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें 0Don't know / नहीं पता	
46.	Do you know about Antyodaya Anna Yojana (AAY)? क्या आप अंत्योदय अन्न योजना (AAY) के बारे में जानते हैं?	1. Yes 2. No	
47.	If yes, what is it? यदि हाँ, तो यह क्या है?	1. The poorest of poor households will receive 35 kg of food grains per household per month / सबसे गरीब परिवारों को प्रति परिवार प्रति माह 35 किलोग्राम अनाज मिलेगा 2. The poorest of poor households will receive 10 kg of food grains per household per month / सबसे गरीब परिवारों को प्रति परिवार प्रति माह 10 किलोग्राम अनाज मिलेगा 3. The poorest of poor households will not receive any food grains per household per month / सबसे गरीब परिवारों को प्रति परिवार प्रति माह कोई अनाज नहीं मिलेगा 4. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें 0Don't know / नहीं पता	
	Knowledge and Practice of services under PM-POSHAN		
48.	Do you know about Mid-day meal Scheme (MDM)? **क्या आप मध्याह्न भोजन योजना (**MDM) **के बारे में जानते हैं?**	1. Yes 2. No	
49.	Who is eligible for Mid- Day meal? **मध्याह्न भोजन के लिए कौन पात्र है?**	1. Children studying in Primary and Upper Primary classes / प्राथमिक और उच्च प्राथमिक कक्षाओं में पढ़ने वाले बच्चे 2. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें 0Don't know / नहीं पता	

50.	What is the importance of MDM? मध्याह्न भोजन का महत्व क्या है?	1. To satisfy hunger of school children / **स्कूली बच्चों की भूख को संतुष्ट करने के लिए** 2. To bridge the gap of protein and calorie / **प्रोटीन और कैलोरी की कमी को पूरा करने के लिए** 3. For Health / **स्वास्थ्य के लिए** 0Don't know / **नहीं पता**	
Knowledge of services under Ayushman Bharat- PM JAY			
51.	Do you know about Ayushman Bharat- PM JAY Scheme? क्या आप आयुष्मान भारत - पीएम जेएवाई योजना के बारे में जानते हैं	1. Yes 2. No	
52.	If yes, what is it? यदि हाँ, तो यह क्या है?	1. It provides a cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization across public and private empaneled hospitals in India / **यह प्रति परिवार प्रति वर्ष** 5 **लाख रुपये तक का कवर प्रदान करती है जो सार्वजनिक और निजी सूचीबद्ध अस्पतालों में द्वितीयक और तृतीयक देखभाल अस्पताल में भर्ती के लिए होती है** 2. It provides a cover of Rs. 2 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India / **यह प्रति परिवार प्रति वर्ष** 2 **लाख रुपये तक का कवर प्रदान करती है** 3. It provides a cover of Rs. 10 lakhs per family per year for secondary and tertiary care hospitalization across public and private empanelled hospitals in India / **यह प्रति परिवार प्रति वर्ष** 10 **लाख रुपये तक का कवर प्रदान करती है** 4. Any other, specify / **कोई अन्य, कृपया निर्दिष्ट करें** 0. Don't know	
53.	Have you ever visited Health and Wellness centre in your village? क्या आपने कभी अपने गांव में स्वास्थ्य और कल्याण केंद्र का दौरा किया है?	0. Yes 1. No	
Knowledge about NSV concepts			
54.	Have you heard about the NSV concept? क्या आपने NSV अवधारणा के बारे में सुना है?	1.Yes 2.No	

55.	If yes what it is यदि हाँ, तो यह क्या है?	1. To make hunger-free village / भूख-मुक्त गांव बनाना 2. Aware about the importance of First 1000 days / पहले 1000 दिनों के महत्व के बारे में जागरूकता 3. Consume at least 5 food groups out of 10 on a regular basis / नियमित रूप से 10 में से कम से कम 5 खाद्य समूहों का सेवन करें 4. Every child should receive a balanced diet / हर बच्चे को संतुलित आहार मिलना चाहिए 5. Grow and buy safe, seasonal and locally produced food / सुरक्षित, मौसमी और स्थानीय रूप से उत्पादित खाद्य पदार्थों को उगाएं और खरीदें 6. Community value uncultivated foods and traditional recipes / समुदाय बिना खेती वाले खाद्य पदार्थों और पारंपरिक व्यंजनों को महत्व देता है 7. Access to safe drinking water / सुरक्षित पेयजल की उपलब्धता 8. Maintains safe sanitation and hand washing practices / सुरक्षित स्वच्छता और हाथ धोने की प्रथाओं का पालन करता है 9. All of the above / उपरोक्त सभी 10. Other, specify / अन्य, कृपया निर्दिष्ट करें	
56.	Have you ever contributed in developing action plan for the village? क्या आपने कभी गांव के लिए कार्य योजना तैयार करने में योगदान दिया है?	1.Yes 2.No	
57.	If No, who prepares the village development plan? यदि नहीं, तो गांव विकास योजना कौन तैयार करता है?		
58.	According to you do you think health and nutrition aspects should be included in village development plan आपके अनुसार क्या आपको लगता है कि स्वास्थ्य और पोषण संबंधी पहलुओं को गांव विकास योजना में शामिल किया जाना चाहिए?	1.Yes 2.No	

Pre Questionnaire for mothers of children aged 6 to 24 months

Nutrition status, Dietary diversity of child and Practice of mother regarding IYCF and WASH

Date _____
Mother name _____
DOB of mother: _____ Age of the mother: _____
Education of the mother: _____
Occupation of the mother: _____
Name of the child: _____ DOB of child: _____
Birth order of the child: _____ Birth weight _____
Sex: _____ Age of the child: _____ Length (cm)/Height(cm)_____
Weight (kg)_____MUAC (cm)_____

Sr. No.	Questions	Choose from responses/ Write responses	Write code
1.	When was the child breast feed? बच्चे को कब स्तनपान कराया गया?	1. Within 1 hr 2. After 1 hr 3. Any other specify 0 Don't know **1.** **1** घंटे के भीतर **2.** **1** घंटे के बाद **3.** कोई अन्य (विशेष उल्लेख करें) **0** पता नहीं	
2.	Was colostrum was given? क्या बच्चे को पीला दूध (कोलोस्ट्रम) दिया गया था?	1.Yes 2.No	
3.	Is your child being currently breastfed? क्या आपका बच्चा अभी भी स्तनपान कर रहा है?	1.Yes 2.No	
4.	If breastfeeding continues than how many times in a day (24 hours) child is breastfed? अगर स्तनपान जारी है, तो 24 घंटे में बच्चे को कितनी बार स्तनपान कराया जाता है?		
5.	Do you breastfeed child during night hours? क्या आप रात के समय बच्चे को स्तनपान कराती हैं?	1.Yes 2.No	
6.	(If ans is no for Q3), then when was breastfeeding stopped (age in months) अगर नहीं, तो स्तनपान कब बंद किया गया (महीनों में उम्र)?		

7.	At what age (months) complementary feeding was initiated for the index child? (refer to the youngest child) (To be asked children at least 4 months) किस उम्र (महीनों में) में पूरक आहार बच्चे को शुरू किया गया?		
8.	When did you start CF for the index child? आपने पूरक आहार बच्चे को कब देना शुरू किया?	1) Before 6 months 2) At 6 months 3) After 6 months 4) Any other specify	
9.	What was the place for first complementary feed? पहला पूरक आहार कहाँ दिया गया था?	1. Home 2. Anganwadi annaprasan day 3. Other specify	
10.	Are you continuing breast feeding child along with complementary feeing? **क्या आप पूरक आहार के साथ बच्चे को स्तनपान भी कराती**	1. Yes 2. No	
11.	If CF was not initiated on competition of 6 months, what were the reasons? (to be asked if complementary feeding not initiated) अगर पूरक आहार 6 महीने पूरे होने के बाद देर से या जल्दी शुरू नहीं हुआ, तो क्या कारण थे? (यदि पूरक आहार शुरू नहीं किया गया है तो पूछा जाए)	1. Child may get stomach ache / बच्चे को पेट दर्द हो सकता है 2. Child may not be able to digest the food / बच्चा भोजन पचा नहीं पाएगा 3. Child may have vomiting/diarrhea / बच्चे को उल्टी/दस्त हो सकता है 4. Breastmilk was sufficient / स्तनपान पर्याप्त था 5. Unaware of the correct age of introducing CF / पूरक आहार शुरू करने की सही उम्र के बारे में जानकारी नहीं थी 6. Food was not available / भोजन उपलब्ध नहीं था 7. Mother working / माँ काम करती है 8. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें	
12.	Reasons for initiating CF at completion of six months छह महीने पूरे होने पर पूरक आहार शुरू करने के कारण	1. Child will be healthy / बच्चा स्वस्थ होगा 2. Hunger will be satisfied / भूख शांत होगी 3. Will sleep more soundly / अच्छी नींद लेगा 4. Will not cry / रोएगा नहीं 5. Counseled by doctor / डॉक्टर की सलाह 6. Counseled by AWW/Health functionary / आंगनवाड़ी कार्यकर्ता/स्वास्थ्य कर्मचारी द्वारा सलाह 7. Breast milk alone not sufficient / केवल स्तनपान पर्याप्त नहीं था 8. Weight increases / वजन बढ़ता है 9. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें	

13.	Do you get Bal Shakti from AWC? क्या आपको आंगनवाड़ी केंद्र से बाल शक्ति मिलता है?	1.Yes 2.No	
14.	If yes, how many packets? अगर हाँ, तो कितने पैकेट मिलते हैं?		
15.	If yes, how frequently? अगर हाँ, तो कितनी बार मिलता है?	1. Weekly 2. Monthly 3. Quarterly	
16.	If no, why you don't get? अगर नहीं, तो क्यों नहीं मिलता?	1. You don’t go to collect THR / आप लेने नहीं जाते 2. You are not getting from AWC / आंगनवाड़ी केंद्र से नहीं मिल रहा 3. Any other, specify / अन्य, कृपया निर्दिष्ट करें	
17.	Do you give Balshakti to your child? क्या आप अपने बच्चे को बाल शक्ति देते हैं?	1.Yes 2.No	
18.	Does your child like Bal Shakti क्या आपका बच्चा बाल शक्ति पसंद करता है?	1.Yes 2.No	
19.	If no, why? अगर नहीं, तो क्यों?		
20.	Does your child eat Bal Shakti regularly? क्या आपका बच्चा बाल शक्ति नियमित रूप से खाता है?	1.Yes 2.No	
21.	If yes, how many times in a day and how many servings? **अगर हाँ, तो दिन में कितनी बार और कितने सर्विंग्स?**		
22.	Which food item did you give to this child at 6-8 months of age? आपने इस बच्चे को 6-8 महीने की उम्र में कौन से खाद्य पदार्थ दिए थे?	1. Grains, roots and tubers 2. Legumes and nuts 3. Dairy products 4. Flesh foods 5. Eggs 6. Vitamin A rich fruits and vegetables 7. Other fruits and vegetables	
23.	Do you wash hands? क्या आप हाथ धोती हैं?	1.Yes 2.No	
24.	If yes with what?	1. Soap 2. Ash 3. Any other specify	
25.	If yes, when अगर हाँ, तो कब?	1. Before preparing the food / भोजन तैयार करने से पहले 2. After preparing the food / भोजन तैयार करने के बाद	

		3. After cleaning the child's feces / बच्चे का मल साफ करने के बाद 4. Before feeding the child / बच्चे को खिलाने से पहले 5. After feeding the child / बच्चे को खिलाने के बाद 6. All of the above / उपरोक्त सभी	
26.	What care do you take while feeding this child? बच्चे को खिलाते समय आप कौन सा ध्यान रखती हैं?	1. Both mother and child wash hands / माँ और बच्चा दोनों हाथ धोते हैं 2. Cleanliness of spoon and bowl / चम्मच और कटोरी की सफाई 3. Temperature of the food (not too hot/cold) / भोजन का तापमान (बहुत गर्म/ठंडा नहीं) 4. Food should not be stale / भोजन बासी नहीं होना चाहिए 5. Safe drinking water / सुरक्षित पीने का पानी 6. All of the above / उपरोक्त सभी 7. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें	
27.	What caution should be taken before giving water to the child? बच्चे को पानी देने से पहले क्या सावधानी बरतनी चाहिए?	1. Boiled and cooled / उबला और ठंडा किया हुआ 2. Clean water / स्वच्छ पानी 3. Any other, specify / कोई अन्य, कृपया निर्दिष्ट करें	
28.	Do you go to attend Mamta Diwas Regularly? (Wednesday) क्या आप नियमित रूप से ममता दिवस में भाग लेती हैं?	1.Yes 2.No	
29.	Do you go to attend Suposhan Diwas Regularly? (1st Tuesday) क्या आप नियमित रूप से सुपोषण दिवस में भाग लेती हैं?	1.Yes 2.No	
30.	Do you go to attend Annanprasan Diwas Regularly? (3rd Tuesday) क्या आप नियमित रूप से अन्नप्राशन दिवस में भाग लेती हैं?	1.Yes 2.No	
31.	If yes, when did you last attended these? (Specify for all events) अगर हाँ, तो आपने आखिरी बार कब इनमें भाग लिया था? (सभी घटनाओं के लिए निर्दिष्ट करें)		

32.	Have you seen growth chart of your child? क्या आपने अपने बच्चे का विकास चार्ट देखा है?	1.Yes 2.No	
33.	If yes, which colour zone does your child fall in? अगर हाँ, तो आपका बच्चा किस रंग क्षेत्र में आता है?	1. Green 2. Yellow 3. Red	
34.	When was the last time you met the AWW? आपने आखिरी बार कब आंगनवाड़ी कार्यकर्ता से मुलाकात की थी?	1. 1 month ago 2. 2-3 month ago 3. 1-6 month ago 4. More than 6 month 5. Any other specific	

24-hour dietary recall of children aged (6-36 months)

Type of diet –

- vegetarian
- non vegetarian
- ovo-lacto vegetarian

which food item did you consume yesterday? (Ask about BAL shakti provided under ICDS and about breast feeding. Also ask about packed items/ aerated sugary drinks that were given during the day and mention the n with names and quantity.

Meal time	Items	Ingredients	Quantity served (using standard cups)
Bal shakti item prepared (specific)			
Any other packed processed food			

Post Questionnaire for mothers of children aged 6 to 24 months

Post intervention

Nutrition status, Dietary diversity of child and Practice of mother regarding IYCF and WASH Code Guide			
Sr. no.	**Particular**	**Choose from responses/ Write responses**	**Write code**
1.	Date of interview		
2.	Name of the mother		
3.	DOB of mother		
4.	Age of the mother		
5.	Name of the child		
6.	DOB of the child		
7.	Age of the child		
8.	Birth order		
9.	Birth weight		
10.	Sex	1. Girl 2. Boy	
11.	Is your child being currently breastfed?	1.Yes 2.No	
12.	If breastfeeding continues than how many times in a day (24 hours) child is breastfed?		
13.	Do you breastfeed child during night hours?	1.Yes 2.No	
14.	If no then when was breastfeeding stopped (age in months)		
15.	What was the place for first complementary feed?	0. Home 1. Anganwadi annaprasan day 2. Other specify	
16.	Are you continuing breast feeding child along with complementary feeing?	3. Yes 4. No 99. NA	
17.	Do you get Bal Shakti from AWC?	1.Yes 2.No	
18.	If yes, how many packets?		
19.	If yes, how frequently?	4. Weekly 5. Monthly 6. Quarterly 99. NA	
20.	If no, why you don't get?	4. You don’t go to collect THR 5. You are not getting from AWC 6. Any other, specify 99. NA	
21.	Do you give Balshakti to your child?	1.Yes 2.No	
22.	Does your child like Bal Shakti	1.Yes 2.No 0 don’t know	

23.	If no, why?		
24.	Does your child eat Bal Shakti regularly?	1.Yes 2.No	
25.	If yes, how many times in a day and how many servings?		
26.	Which food item did you give to this child at 6-8 months of age?	8. Grains, roots and tubers 9. Legumes and nuts 10. Dairy products 11. Flesh foods 12. Eggs 13. Vitamin A rich fruits and vegetables 14. Other fruits and vegetables 0. Don't know	
27.	Do you wash hands?	1.Yes 2.No	
28.	If yes with what?	4. Soap 5. Ash 6. Any other specify 99. NA	
29.	If yes, when	7. Before preparing the food 8. After preparing the food 9. After cleaning the child's feces 10. Before feeding the child 11. After feeding the child 12. All of the above 99. NA	
30.	What care do you take while feeding this child?	8. Both mother and child wash hands 9. Cleanliness of spoon and bowl 10. Temperature of the food (not too hot/cold) 11. Food should not be stale 12. Safe drinking water 13. All of the above 14. Any other, specify	
31.	What caution should be taken before giving water to the child?	4. Boiled and cooled 5. Clean water 6. Any other, specify	
32.	Do you go to attend Mamta Diwas Regularly? (Wednesday)	1.Yes 2.No	
33.	Do you go to attend Suposhan Diwas Regularly? (1st Tuesday)	1.Yes 2.No	
34.	Do you go to attend Annanprasan Diwas Regularly? (3rd Tuesday)	1.Yes 2.No	
35.	Have you seen growth chart of your child?	1.Yes 2.No	
36.	If yes, which colour zone does your child fall in?	4. Green 5. Yellow 6. Red 0 don't know	

		99. NA	
37.	When was the last time you met the AWW?	6. 1 month ago 7. 2-3 month ago 8. 1-6 month ago 9. More than 6 month 10. Any other specific	

24-hour dietary recall of children aged (6-36 months)

Type of diet –

- vegetarian
- non vegetarian
- ovo-lacto vegetarian

which food item did you consume yesterday? (Ask about BAL shakti provided under ICDS and about breast feeding. Also ask about packed items/ aerated sugary drinks that were given during the day and mention the n with names and quantity.

Meal time	Items	Ingredients	Quantity served (using standard cups)
Bal shakti item prepared (specific)			
Any other packed processed food			

Pre questionnaire for the upper primary school children

Nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children.

Date of visit_____
Name of the child: નામ _____
Standard ધોરણ – ( ) 6 ( ) 7 ( ) 8

DOB of child જન્મ તારીખ: _____ Age of the child: _____
Sex/ લિંગ : _____ Height (cm)_____Weight (kg)_____

Sr. No.	Questions	Choose from responses/ Write responses	Write code
1.	Do you receive MDM in school daily? શું તમને શાળામાં દરરોજ મધ્યાહન ભોજન મળે છે?	1. હા 2. ના	
2.	Do you consume MDM daily in school શું તમે દરરોજ શાળામાં મધ્યાહન ભોજન લો છો?	1. હા 2. ના	
3.	Do you like MDM food? શું તમને મધ્ય ભોજનનું ભોજન ગમે છે?	1. હા 2. ના	
4.	If no than why? જો નથી, તો શા માટે?		
5.	Do you what are the benefits of MDM શું તમે મધ્ય ભોજનના ફાયદા શું છે?	1. To satisfy hunger / 1. ભૂખ સંતોષવા માટે 2. To bridge protein-calories gap / પૂરા કરવા માટે પ્રોટીન અને કેલોરી ઓછી કરો 3. Good health / સારા સ્વાસ્થ્ય માટે 4. Any other, specify / અન્ય, કૃપા કરીને પસંદ કરો 5. Don't know / જાણતા નથી	
6.	Do you receive IFA tablet in school? શું તમને શાળામાં લોહા તત્વની ગોળીઓ મળે છે?	1. હા 2. ના	

7.	When did you received last time? તમને છેલ્લે ક્યારે આ ગોળીઓ મળી?		
8.	Do you consume IFA tablet? શું તમે લોહા તત્વની ગોળીઓ લો છો?	1. હા 2. ના	
9.	Do you receive deworming tablet from the school? શું તમને શાળામાંથી કૃમિનાશક ગોળીઓ મળે છે?	1. હા 2. ના	
10	Do you consume deworming tablet? શું તમે કુમિનાશક ગોળીઓ લો છો?	1. હા 2. ના	
11	Does any health checkup is done in school? શું શાળામાં કોઈ હેલ્થ ચેકઅપ કરવામાં આવે છે?	1. હા 2. ના	
12	When does it happen last time? છેલ્લી વખત આવું ક્યારે બન્યું હતું?		

Post questionnaire for the upper primary school children

Nutritional status and service utilization (IFA, deworming, health check-ups and MDM) of primary school children.

Sr. No.	Questions	Choose from responses/ Write responses	Write code
1.	Name of the child **નામ**		
2.	Standard **ધોરણ**	1. 6 2. 7 3. 8	
3.	DOB of child **જન્મ તારીખ**		
4.	Age of the child		
5.	Sex **લિંગ**		
6.	Anthropometric measurement Height (cm)		
7.	Anthropometric measurement Weight (kg)		
8.	Do you receive MDM in school daily? શું તમને શાળામાં દરરોજ મધ્યાહન ભોજન મળે છે?	1.Yes હા 2. No ના	
9.	Do you consume MDM daily in school શું તમે દરરોજ શાળામાં મધ્યાહન ભોજન લો છો?	1.Yes હા 2. No ના	
10.	Do you like MDM food? શું તમને મધ્ય ભોજનનું ભોજન ગમે છે?	1.Yes હા 2. No ના	
11.	If no than why? જો નથી, તો શા માટે?		
12.	Do you what are the benefits of MDM શું તમે મધ્ય ભોજનના ફાયદા શું છે?	6. To satisfy hunger / 1. ભૂખ સંતોષવા માટે 7. To bridge protein-calories gap / પૂરા કરવા માટે પ્રોટીન અને કેલોરી ઓછી કરો 8. Good health / સારા સ્વાસ્થ્ય માટે 9. Any other, specify / અન્ય, કૃપા કરીને પસંદ કરો Don’t know / જાણતા નથી	

13.	Do you receive IFA tablet in school? શું તમને શાળામાં લોહા તત્વની ગોળીઓ મળે છે?	1.Yes હા 2. No ના	
14.	When did you received last time? તમને છેલ્લે ક્યારે આ ગોળીઓ મળી?		
15.	Do you consume IFA tablet? શું તમે લોહા તત્વની ગોળીઓ લો છો?	1.Yes હા 2. No ના	
16.	Do you receive deworming tablet from the school? શું તમને શાળામાંથી કૃમિનાશક ગોળીઓ મળે છે?	1.Yes હા 2. No ના	
17.	Do you consume deworming tablet? શું તમે કુમિનાશક ગોળીઓ લો છો?	1.Yes હા 2. No ના	
18.	Does any health checkup is done in school? શું શાળામાં કોઈ હેલ્થ ચેકઅપ કરવામાં આવે છે?	1.Yes હા 2. No ના	
19.	When does it happen last time? છેલ્લી વખત આવું ક્યારે બન્યું હતું?		

APPENDIX V

Training Module

પોષણ સ્માર્ટ ગામ બનાવા માટે ની માર્ગદર્શિકા

તકનિકી નિષ્ણાંત - ડૉ. હેમાંગીની ગાંધી (આસિસ્ટન્ટ પ્રોફેસર)

સંશોધન વિદ્યાર્થી - તન્વી કોટડિયા (Sr. M.Sc. PHN)

ડિપાર્ટમેન્ટ ઓફ ફુડ એન્ડ ન્યુટ્રીશન, ફેકલ્ટી ઓફ ફેમિલી એન્ડ કમ્યુનિટી સાયન્સ

મહારાજા સયાજીરાવ યુનિવર્સિટી ઓફ બરોડા, વડોદરા

અનુક્રમણિકા

	૧. સ્તનપાન ક્યારથી શરુ કરવું અને ક્યાર શુધી ચાલુ રાખવું? ૨. દિવસ અને રાત્રે કેટલી વાર સ્તનપાન આપવું? ૩. કોલોસ્ટ્રોમ – માતાની પહેલા પીડા દૂધ ના ફાયદા ૪. ગુથ્થી વગેરે ના આપવાનું કારણ ૫. ૬ મહિના સુધી ફક્ત માતાનું ધાવણ આપવું, પાણી પણ નહિ • ઉપરી આહાર એટલે શું? • ઉપરી આહાર કેવો હોવો જોઈએ? • ઉમર પ્રમાણે ઉપરી આહાર નું પ્રમાણ • ઉપરી આહાર માટે ધ્યાન માં રાખવાની બાબતો આંગણવાડી માં થી મળતા બાલશક્તિ ના પેકેટ અંગે સમજ	
6	**કુપોષણ** • કુપોષણ શું છે? • કુપોષણના પ્રકાર, તેનાં કારણો અને પરિણામો • કુપોષણ માટે સૌથી વધુ જથ્થાબંધ કોણ છે? • કુપોષણને કેવી રીતે રોકવું?	
7	**સરકારી સેવાઓ** • આઇ સી ડી એસ (ICDS) • પી ડી એસ (PDS) • પી એમ પોષણ (PM-POSHAN) • આયુષ્માન ભારત- પીએમ જય (Ayushman Bharat- PM JAY)	
8	**તમારું ગામ "પોષણ-સ્માર્ટ" બનાવવા માટેની કાર્યયોજના**	

પોષણ સ્માર્ટ ગામ/ ન્યૂટ્રીશન સ્માર્ટ વિલેજ

1.1 ન્યૂટ્રીશન સ્માર્ટ વિલેજનો વિચાર - નીતિ આયોગ

ન્યૂટ્રીશન સ્માર્ટ વિલેજ (NSV) ની કલ્પના **પોષણ અભિયાન** હેઠળ કરવામાં આવી હતી, જે ભારત સરકાર દ્વારા માર્ચ 2018માં શરૂ કરવામાં આવ્યું હતું. આ કાર્યક્રમ, જે **રાષ્ટ્રીય પોષણ મિશન** તરીકે પણ ઓળખાય છે,નો ઉદ્દેશ્ય કુપોષણ ઘટાડવાનો છે, જેમાં **સ્ટન્ટિંગ (વૃદ્ધિમાં ખોડ), એનિમિયા અને ઓછા વજનના જન્મ દરને ઘટાડવા**, તેમજ બાળકો, કિશોરીઓ, ગર્ભવતી મહિલાઓ અને ધાવણ આપતી માતાઓ માટે પોષણના પરિણામોમાં સુધાર કરવો સામેલ છે. આ મિશન **મલ્ટી-સેક્ટોરલ એપ્રોચ**નો ઉપયોગ કરે છે, જેમાં આરોગ્ય, કૃષિ, શિક્ષણ અને સ્વચ્છતા ક્ષેત્રોને સામેલ કરવામાં આવ્યા છે જેથી વ્યાપક અને ટકાઉ અસર થાય.

2021માં, **મિશન પોષણ 2.0** દ્વારા પોષણ અભિયાનના ઉદ્દેશ્યોને વધુ વિસ્તૃત કરવામાં આવ્યા. આ મિશન ખાસ કરીને **પોષણ-સંવેદનશીલ કૃષિ**, શિક્ષણ, **WASH (પાણી, સ્વચ્છતા અને સ્વચ્છતા)** અને પરંપરાગત પદ્ધતિઓને સંકલિત કરીને કુપોષણ સામે વધુ અસરકારક રીતે લડવાનો પ્રયાસ કરે છે. આ વ્યાપક પ્રતિબદ્ધતા ભારતના **સસ્ટેનેબલ ડેવલપમેન્ટ ગોલ્સ (SDGs)** હાંસલ કરવા માટેના પ્રયાસો સાથે ગોઠવાયેલ છે, ખાસ કરીને લક્ષ્ય 2 (શૂન્ય ભૂખ્યા) અને લક્ષ્ય 3 (સારા આરોગ્ય અને કલ્યાણ). આ પ્રયાસના ભાગરૂપે, **ન્યૂટ્રીશન સ્માર્ટ વિલેજ**ની કલ્પના કરવામાં આવી હતી, જે ગ્રામ્ય સમુદાયોને આરોગ્ય અને પોષણની શ્રેષ્ઠતા માટે મોડલમાં રૂપાંતરિત કરે છે.

ન્યૂટ્રીશન સ્માર્ટ વિલેજ એ સંપૂર્ણપણે સંચાલિત એવાં ગામ છે, જ્યાં પોષણ જીવનના દરેક ક્ષેત્રમાં સામેલ કરવામાં આવે છે, આરોગ્ય અને ભલાઈમાં સુધાર માટે વ્યાપક ઇકોસિસ્ટમ તૈયાર કરવામાં આવે છે.

આ દ્રષ્ટિ ચાર મુખ્ય સ્તંભો પર આધાર રાખે છે:

1. **ભૂખમરો અને ખોરાક સુરક્ષાની સમાપ્તિ:**
   ગામના દરેક કુટુંબ પાસે પૂરતું, સલામત અને પોષણયુક્ત ખોરાક ઉપલબ્ધ છે. સુધારેલી ખેતી પદ્ધતિઓ, સારા સંસાધન વ્યવસ્થાપન, અને સરકારની યોજનાઓની ઍક્સેસ દ્વારા કુટુંબો ભૂખમરાની સમસ્યાઓનો સામનો કરતો નથી.

2. **'પ્રથમ 1000 દિવસ' વિશે જાગૃતતા:**
   "પ્રથમ 1000 દિવસ" એ ગર્ભાવસ્થાથી બાળકના બીજા જન્મદિવસ સુધીનો સમયગાળો છે. આ વિંડો બાળકના માનસિક, શારીરિક અને રોગપ્રતિકારક વિકાસ માટે અત્યંત મહત્વપૂર્ણ છે. ન્યૂટ્રીશન સ્માર્ટ વિલેજમાં માતા અને બાળ પોષણ વિશે જાગૃતિ પેદા કરવાનું પ્રાથમિકતા છે.

3. **કૃષિ, WASH અને પોષણનું સંકલન:**
   ન્યૂટ્રીશન સ્માર્ટ વિલેજ કૃષિ, કુદરતી સંસાધનો, WASH અને પોષણના મેલને પ્રોત્સાહન આપે છે. સમુદાય ટકાઉ ખેતી પદ્ધતિઓ અપનાવે છે, પાણીના સંસાધનોનું અસરકારક રીતે સંચાલન કરે છે, અને સ્વચ્છતાને જાળવે છે.

4. **સ્થાનિક સંસાધનો અને પરંપરાગત જ્ઞાનનો ઉપયોગ:**
   આ પહેલ પરંપરાગત વાનગીઓ, જંગલમાંથી મળતા ખોરાક અને ઘરઆંગણની ખેતીના ઉપયોગને પ્રોત્સાહિત કરે છે. આ સંસાધનોનો સદુપયોગ કરીને સમુદાયો આહારીય વિવિધતામાં સુધાર કરી શકે છે, સાંસ્કૃતિક પદ્ધતિઓ જાળવી શકે છે, અને ખોરાકની અસુરક્ષા સામે વધુ પ્રતિરોધક બની શકે છે.

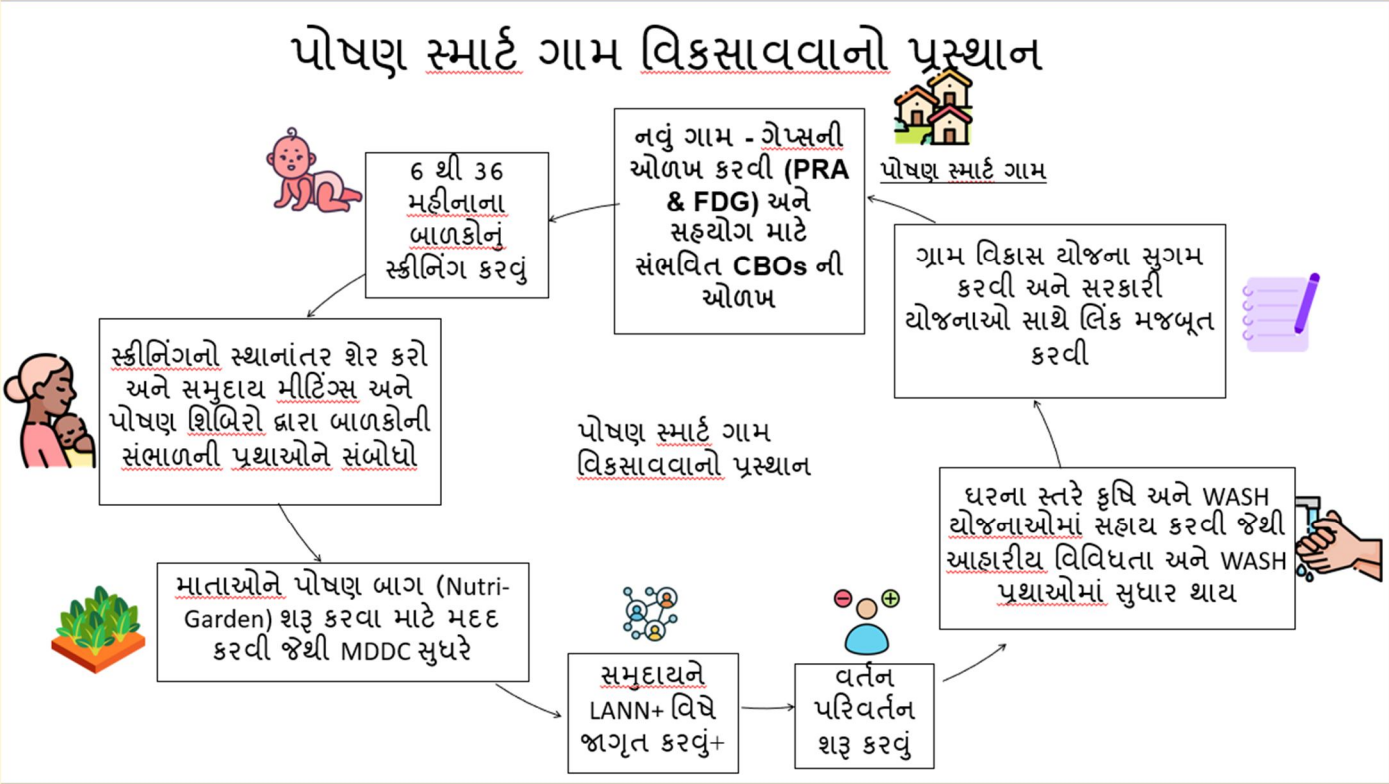
ન્યૂટ્રીશન સ્માર્ટ વિલેજની મુખ્ય વિશેષતાઓ:

- ગામના સક્રિય સમિતિઓ કૃષિ, આરોગ્ય, અને પર્યાવરણ ટકાવારી માટે પ્રયાસ કરે છે.
- કુટુંબો તાજા, મોસમી અને સ્થાનિક સ્તરે ઉપલબ્ધ ખોરાકનું સેવન કરે છે.
- બાળકોને યોગ્ય માપદંડ અનુસાર ઘરમાં બનાવેલો સંતુલિત આહાર મળે છે.
- ગામના લોકો સ્થાનિક બજાર (હાટ) પર નિયંત્રણ રાખે છે અને સુરક્ષિત, પર્યાવરણમૈત્રી અને પોષણયુક્ત ઉત્પાદનોની માંગ કરે છે.
- દરેક કુટુંબ સરકારની યોજનાઓનો લાભ લે છે અને તેમના હક્ક અને હકદાર યોજનાઓને સક્રિય રીતે માંગે છે.

આ પ્રયત્નો દ્વારા, ન્યૂટ્રીશન સ્માર્ટ વિલેજ સંકલિત ગામડાઓનું નિર્માણ કરે છે, જે પોષણને જીવનશૈલીમાં શ્રેષ્ઠ રીતે સામેલ કરીને સ્વસ્થ અને આત્મનિર્ભર સમાજ બનાવે છે.

1.2 પોષણ સ્માર્ટ ગામ વિકસાવવા માટેની પ્રક્રિયા

પોષણ સ્માર્ટ ગામ (NSV) વિકસાવવા માટેની પ્રક્રિયા વ્યાપક છે, જેમાં કુપોષણનો સામનો કરવા અને આરોગ્યના પરિણામોમાં સુધાર માટે ટકાઉ ઉકેલો બનાવવામાં આવે છે. આ પ્રક્રિયા ગામને પોષણ સ્માર્ટ ગામમાં પરિવર્તિત કરવા માટે પગલુંદર પગલાની રૂપરેખા નીચે આપેલી છે:



પગલું 1: ગામની ઓળખ અને પ્રારંભિક મૂલ્યાંકન

- **પ્રતિભાવી ગ્રામ્ય મૂલ્યાંકન (PRA)** અને **ફોકસ ગ્રુપ ચર્ચાઓ (FDGs)** કરીને પોષણ, કૃષિ, WASH (પાણી, સ્વચ્છતા અને આરોગ્ય) અને આરોગ્યસંભાળની પ્રથાઓમાં ગેપ્સની ઓળખ કરો.
- સ્થાનિક **કમ્યુનિટી-આધારિત સંગઠનો (CBOs)** જેમ કે સેલ્ફ-હેલ્પ ગ્રુપ્સ (SHGs), ખેડૂત ઉત્પાદક સંગઠનો (FPOs), અને સ્થાનિક આરોગ્ય સમિતિઓ સાથે સહયોગ માટે શક્યતાઓનું મૂલ્યાંકન કરો.

પગલું 2: 6 થી 36 મહિનાના બાળકોનું સ્ક્રિનિંગ

- 6 થી 36 મહિનાના બાળકોના પોષણની સ્થિતિના મૂલ્યાંકન માટે તેમનું સ્ક્રિનિંગ કરો, જેમાં **એન્થ્રોપોમેટ્રિક માપન** (ઊંચાઈ, વજન, મધ્ય-ઉપર આર્મ ફરવાનું માપન) નો સમાવેશ થાય છે, જેથી કુપોષણ, સ્ટન્ટિંગ અને વેસ્ટિંગની ઓળખ થાય.
- સમુદાયમાં **ઈન્ટન્ટ અને યુવાન બાળ આહાર (IYCF)** પ્રથાઓનું મૂલ્યાંકન કરો, જેમાં સ્તનપાન અને પૂરક આહારની પ્રથાઓનો સમાવેશ થાય છે.

પગલું 3: સમુદાય મીટિંગ્સ અને પોષણ શિબિરો

- સ્ક્રિનિંગના પરિણામોને સમુદાય સાથે શેર કરો, જેથી બાળકના પોષણના સ્થિતિ અને સંભાળ પ્રથાઓમાં ગેપ્સ અંગે જાગૃતિ ઉભી થાય.
- **સમુદાય મીટિંગ્સ** અને **પોષણ શિબિરો**નું આયોજન કરો, જેમાં સંતુલિત આહાર, પૂરક આહાર અને આહારીય વિવિધતાની જાગૃતિ ફેલાવવામાં આવે.

પગલું 4: માતાઓને પોષણ બાગ (Nutri-Garden) શરૂ કરવા માટે પ્રોત્સાહન આપવું

- માતાઓને આહારીય વિવિધતાના મહત્વ અંગે કાઉન્સેલિંગ આપો અને પોષણ બાગ (Nutri-Garden) સ્થાપિત કરવાની માર્ગદર્શિકા પ્રદાન કરો, જેમાં શાકભાજી, ફળ અને ઔષધિઓ ઉગાડવામાં આવે.
- પોષણ બાગનો ઉપયોગ **મિનિમમ ડાયટરી ડાઇવર્સિટી ફોર ચિલ્ડ્રન (MDDC)** સુધારવામાં મદદરૂપ થાય છે.

પગલું 5: સમુદાયને LANN+ વિષે જાગૃત કરવું

- **LANN+ (કૃષિ અને કુદરતી સંસાધનોને પોષણ સાથે જોડતા અભિગમ)** ના ઉપયોગનું મહત્વ સમજાવો.
- સમુદાયને સ્થાયી ખેતી પ્રથાઓ અને સ્થાનિક સંસાધનોના ઉપયોગ માટે પ્રોત્સાહિત કરો, જે પોષણમાં સુધાર માટે મદદરૂપ છે.

પગલું 6: વર્તન પરિવર્તન શરૂ કરવું

- પોષણ, આરોગ્ય અને સ્વચ્છતા માટે સકારાત્મક ફેરફારો પ્રોત્સાહિત કરવા **સામાજિક અને વર્તન પરિવર્તન સંચાર (SBCC)** સત્રોનું આયોજન કરો.

- લોકપ્રિય રીતે કથાઓ, લોકગીતો અને દ્રશ્ય સાધનો જેવી સંસ્કૃતિ આધારિત પદ્ધતિઓનો ઉપયોગ કરો.

પગલું 7: ઘરો માટે કૃષિ અને WASH યોજનાઓમાં સહાય

- ઘરોમાં કૃષિ અને WASH (પાણી, સ્વચ્છતા) માટે વ્યાપક આયોજનમાં મદદ કરો, જેથી આહારીય વિવિધતા અને સ્વચ્છતા પ્રથાઓમાં સુધાર થાય.
- સુરક્ષિત પાણીનો ઉપયોગ, યોગ્ય હેન્ડવોશિંગ તકનીકો અને ટકાઉ ખેતી પદ્ધતિઓનો પ્રચાર કરો.

પગલું 8: ગ્રામ વિકાસ યોજના સુગમ કરવી

- સ્થાનિક સંસ્થાઓ અને સ્ટેકહોલ્ડર્સની સક્રિય ભાગીદારી સાથે વ્યાપક **ગ્રામ વિકાસ યોજના (VDP)** તૈયાર કરો.
- આ યોજનાને સરકારી યોજનાઓ જેમ કે **ICDS, MGNREGA, PMMVY અને POSHAN અભિયાન** સાથે લિંક કરીને કનેક્ટિવિટી મજબૂત બનાવો, જેથી સંસાધનોનો યોગ્ય રીતે ઉપયોગ થાય.

પ્રક્રિયાના મુખ્ય ફોકસ ક્ષેત્રો

1. **પોષણની સ્થિતિનું મૂલ્યાંકન:**
    - બાળકોના વિકાસ અને વૃદ્ધિની નિયમિત રીતે દેખરેખ રાખવી.
    - સ્ક્રિનિંગ પરિણામો પર આધાર રાખીને પ્રાથમિક ક્ષેત્રોની ઓળખ કરવી.
2. **માતાઓ અને કુટુંબો સાથે કાઉન્સેલિંગ:**
    - માતાઓને પોષણ અને સંભાળની પ્રથાઓ સુધારવા માટે કાઉન્સેલિંગ આપવું.
    - પિતાઓ અને કુટુંબના અન્ય સભ્યોને પણ આ પ્રક્રિયામાં શામેલ કરવું.
3. **સ્થાનિક સંસ્થાઓ સાથે ભાગીદારી:**
    - પંચાયતો અને SHGs જેવા સ્થાનિક સંસ્થાઓને પ્રોત્સાહિત કરીને NSV વિકાસ પ્રક્રિયામાં સંવેદનશીલ કરવું.
    - સમુદાય અને સ્થાનિક શાસન વચ્ચે લાંબા ગાળાની ટકાઉપણું સુનિશ્ચિત કરવા માટે સહકાર વધારવો.

1.3 પોષણ સ્માર્ટ ગામનું મહત્વ

પોષણ સ્માર્ટ ગામ (NSV) ના વિકાસમાં મહત્વપૂર્ણ ભૂમિકા છે, જે ગ્રામ્ય આરોગ્ય અને સુખાકારી સુધારવામાં મદદ કરે છે. આ ગામોના મહત્વની વાતો નીચે આપેલી છે:

1. કુપોષણનો સામનો કરવું

કુપોષણને દૂર કરવા માટે પોષણ સ્માર્ટ ગામો મહત્વપૂર્ણ છે. આ ગામો બાળકો, મહિલાઓ, અને કિશોરીઓ માટે **સંતુલિત અને વિવિધ આહાર** પ્રદાન કરે છે.

- **સંતુલિત આહાર:** પોષણ સ્માર્ટ ગામો એ ખાતરી આપે છે કે દરેક કુટુંબમાં પોષણયુક્ત અને આરોગ્યપ્રદ ખોરાક ઉપલબ્ધ હોય. ગામમાં **વિભિન્ન ખોરાક જૂથો**નો સમાવેશ થાય છે જેમ કે ફળો, શાકભાજી, અનાજ, પ્રોટીન, અને દૂધ, જે બધું નાની અને મોટી બમણાઈ વિટામિન અને ખનિજ આપે છે.
- **કુપોષણના મૂળ કારણોનું નિરાકરણ:** પોષણ સ્માર્ટ ગામો **WASH** (પાણી, સ્વચ્છતા અને સ્વચ્છતા) ક્ષેત્રે સુધારો કરીને ખોરાકની અસુરક્ષા અને ખોટા આહારના પરિસ્થિતિઓને દૂર કરે છે. આ દરની સમસ્યાઓને નિવારવા માટે, ગામોમાં સારા પાણી, સુવિધાઓ અને સ્વચ્છતા પર ધ્યાન આપવું મહત્વપૂર્ણ છે.

2. ગ્રામ્ય સમુદાયોનું સશક્તિકરણ

પોષણ સ્માર્ટ ગામો **ગ્રામ્ય સમુદાયોને સશક્ત બનાવે છે**, જેમણે આરોગ્ય, સ્વચ્છતા અને ટકાઉ કૃષિના મહત્વને સમજવું અને તેનુ અનુસરવું છે.

- **પોષણ અને સ્વચ્છતા પર જાગૃતિ:** ગામોમાં **માતૃત્વ અને બાળકના આરોગ્ય** વિશે જાગૃતતા વધારવા માટે કાર્યક્રિયાઓ ચલાવવી. આ સાથે, ગામના લોકો આરોગ્યપ્રદ આહાર અને સ્વચ્છતા અંગે નવી નીતિઓ અને રીતો અપનાવશે.
- **મહિલાઓ અને કિશોરીઓની સક્રિય ભાગીદારી:** ગ્રામ્ય વિસ્તારોમાં મહિલાઓ મુખ્યત્વે પરિવારની સંભાળ રાખે છે, તેથી તેમને આહારીય ખ્યાલ અને કુટુંબ પોષણમાં રસ ધરાવવી ખૂબ જ મહત્વપૂર્ણ છે. આથી, મહિલાઓ અને કિશોરીઓની સક્રિય ભજવણી પ્રોત્સાહિત કરવામાં આવે છે.

3. ટકાઉ પદ્ધતિઓનું પ્રોત્સાહન

પોષણ સ્માર્ટ ગામો **કૃષિ અને પર્યાવરણના ટકાઉ પદ્ધતિઓ**નો ઉપયોગ કરે છે જે આરોગ્યપ્રદ અને પોષણયુક્ત ખોરાક ઉપલબ્ધ કરે છે.

- **પોષણ બાગ અને ઘરઆંગણમાં ખેતી:** ગામોમાં પોષણ બાગ બનાવવાના માર્ગદર્શનથી કુટુંબો તાજા, મોસમી અને પોષણયુક્ત ખોરાક ઊગાડી શકે છે. આ પદ્ધતિથી ગામના લોકો વર્ષભર આરોગ્યપ્રદ ખોરાક મેળવી શકે છે.
- **પરંપરાગત જ્ઞાનની સંરક્ષણ:** ગામોએ **પરંપરાગત વાનગીઓ** અને **સ્થાનિક ખોરાક પ્રણાળીઓ** ને પ્રતિષ્ઠિત કરવી. આ ખોરાકો સ્વાસ્થ્યપ્રદ અને પોષણયુક્ત હોય છે, અને એજ સમાજની આ પરિચય જાળવે છે.

4. સ્થાનિક શાસનની મજબૂતી

સ્થાનિક શાસન એ પોષણ સ્માર્ટ ગામોના મજબૂત બનવા માટે મહત્વપૂર્ણ છે. આ ગામોમાં **સક્રિય ગામ સમિતિઓ** બનાવવામાં આવે છે જે પોષણ, કૃષિ, WASH, અને કુદરતી સંસાધનોનું સંકલન કરે છે.

- **સંપૂર્ણ મેલ મિલાવવું:** ગામની સમિતિ કૃષિ, પોષણ, આરોગ્ય અને પર્યાવરણનું સંકલન કરે છે જેથી દરેક ક્ષેત્રમાં સુધારો થઈ શકે.
- **સ્થાનિક નિર્ણયો અને સામૂહિક ભાગીદારી:** સ્થાનિક લોકો પોતાનાં ગામના વિકાસ માટે નિર્ણયો લે છે અને તેમાં સક્રિય ભાગીદારી કરે છે, જેના કારણે વિલેજના વિકાસ માટે તેમની જવાબદારીનો સમાવેશ થાય છે.

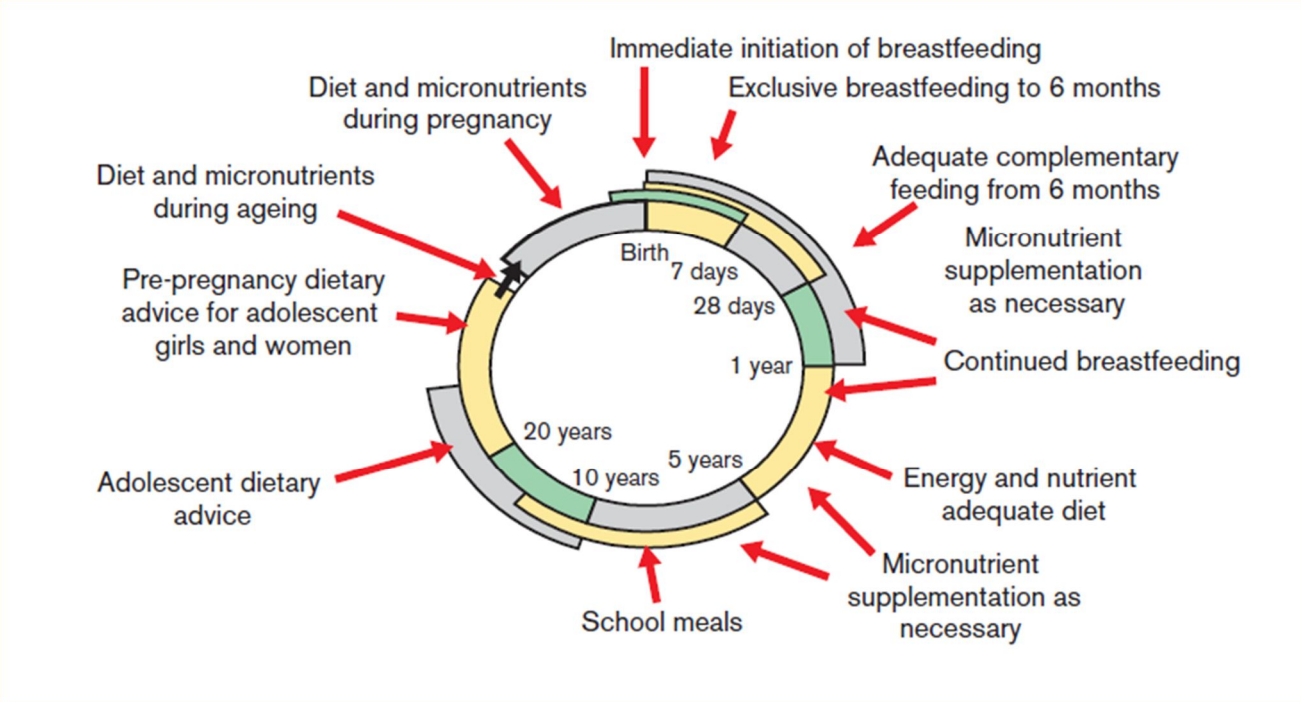
5. આર્થિક અને સામાજિક પરિણામોમાં સુધારો

આ **આર્થિક અને સામાજિક પરિણામો** પોષણ સ્માર્ટ ગામો સામે ઊભા કરે છે, જે શ્રેષ્ઠ આરોગ્ય અને ટકાઉ વિકાસમાં મદદરૂપ થાય છે.

- **આરોગ્ય ખર્ચમાં ઘટાડો:** કુપોષણના કારણે થતા રોગોને અટકાવવાથી **આરોગ્ય ખર્ચ** ઘટાડવામાં મદદ મળે છે. મેલ્ન્યુટ્રીશન-સંબંધિત રોગો દૂર થવાથી લાંબા ગાળે આરોગ્ય પર ખર્ચમાં ઘટાડો થાય છે.
- **સમુદાયની આત્મનિર્ભરતા:** આ ગામો આરોગ્ય, સ્વચ્છતા, અને કૃષિ ક્ષેત્રે સશક્ત બનાવવા માટે સ્થાનિક લીડરશિપ અને આત્મનિર્ભરતા પ્રોત્સાહિત કરે છે, જે સંબંધો અને સામાજિક સંસ્કૃતિમાં મજબૂતી લાવે છે.
- **સામાજિક સમાવેશ:** દરેક સમાજના સભ્યને આરોગ્યના લાભોમાં તક મળે છે, ખાસ કરીને મહત્વના સમુદાય જૂથો જેમ કે મહિલાઓ, બાળકો અને ખોટા સંસાધનો ધરાવનારાઓ માટે.

1.4 પોષણ સ્માર્ટ ગામને લાઈફ સાયકલ ઍપ્રોચ સાથે જોડવું

પોષણ સ્માર્ટ ગામ (NSV) પહેલ જીવનના દરેક તબક્કે પોષણ અને આરોગ્ય લાભો સુનિશ્ચિત કરવા માટે **લાઈફ સાયકલ ઍપ્રોચ** સાથે જોડાય છે. આ અભિગમ પોષણ અને આરોગ્યના લાભોને જીવનના દરેક તબક્કે ટકાઉ રીતે સુંશ્ચિત કરવા માટે કામ કરે છે.



પ્રથમ 1000 દિવસ

પ્રથમ 1000 દિવસ એ ખૂબ જ મહત્વપૂર્ણ સમયગાળો છે, જે ગર્ભાવસ્થા થી બાળકોના બીજા જન્મદિવસ સુધી હોય છે. આ સમયગાળામાં બાળકનો **માનસિક, શારીરિક અને રોગપ્રતિકારક વિકાસ** થાય છે.

1. **માતૃત્વ પોષણ:**
   ગર્ભાવસ્થામાં યોગ્ય પોષણ એટલું મહત્વપૂર્ણ છે કે તે બાળકના સ્વસ્થ વિકાસ માટે જરૂરી છે. આ સમયે, માથા અને બાળક બંને માટે પોષણ પૂરું પાડવું જરૂરી છે.
   - **સ્તનપાન:** 6 મહિને ગુરુત્વપૂર્વક **સ્તનપાન** કરાવવું, જે બાળક માટે તમામ પોષક તત્વો પ્રદાન કરે છે.
2. **બાળ પોષણ:**
   આ સમયગાળા દરમિયાન, પોષણયુક્ત આહાર બાળકોને સ્ટન્ટિંગ અને વેસ્ટિંગથી બચાવે છે, જે લાંબા ગાળે આરોગ્ય પર નકારાત્મક અસર કરે છે.

કિશોરીઓ માટે પોષણ

કિશોરીઓ માટે પોષણ એક મહત્વપૂર્ણ તબક્કો છે. આ સમયે શારીરિક અને માનસિક વિકાસ સાથે પોષણની જરૂરિયાત વધી જાય છે.

1. **વૃદ્ધિ અને વિકાસ:**
   કિશોરીઓમાં ઝડપથી વૃદ્ધિ થાય છે અને આ સમયે પોષણની વધારે જરૂરિયાત હોય છે. યોગ્ય પોષણ કિશોરીઓને સ્વસ્થ અને મજબૂત બનાવે છે, ખાસ કરીને છોકરીઓને.
2. **આગામી પેઢી માટે પોષણ:**
   યોગ્ય પોષણ પેઢી માટેની આરોગ્ય સમસ્યાઓને ટાળી શકે છે અને સુખદ જીવન માટે જરૂરી છે. પોષણ અભાવ ભવિષ્યમાં ગર્ભવતી સ્ત્રીઓ અને બાળકો માટે સમસ્યાઓ સર્જી શકે છે.

માતૃત્વ આરોગ્ય

ગર્ભાવસ્થા અને **ધાવણ પાન** દરમિયાન યોગ્ય પોષણ માત્ર માતાના સ્વાસ્થ્ય માટે નહિ, પણ બાળકના વિકાસ માટે પણ અગત્યનું છે.

1. **ગર્ભાવસ્થામાં પોષણ:**
   યોગ્ય પોષણ ગર્ભવતી મહિલાને અને બાળકને સ્વસ્થ રાખે છે. આ માટે આહારમાં કૅલ્શિયમ, આયરન, પ્રોટીન અને વિટામિન્સનું યોગ્ય પ્રમાણ જરૂરી છે.
   - **ધાવણ પાન:** આ સમયગાળા દરમિયાન, માતાને આરોગ્યપ્રદ આહાર જરૂરી છે, જેથી તે ઉત્તમ ગુણવત્તાવાળું દૂધ પોષણ માટે આપી શકે.
2. **માતૃત્વ એનિમિયા અટકાવવું:**
   ગર્ભાવસ્થામાં આયરન ની ઘટીથી **એનિમિયા**નું જોખમ વધે છે, જે ગંભીર આરોગ્ય સમસ્યાઓ સર્જી શકે છે. એનિમિયા અટકાવવું વિધિ દ્વારા જન્મના પરિણામોને સુધારવામાં મદદ મળે છે.

લાઇફ સાયકલ એપ્રોચ સાથે સંકલન

લાઇફ સાયકલ એપ્રોચ હેઠળ, પોષણ સ્માર્ટ ગામો દરેક વ્યક્તિને તેના જીવનના દરેક તબક્કે યોગ્ય પોષણ અને આરોગ્ય સેવા પ્રદાન કરે છે. આ અભિગમ દ્વારા પોષણ અભાવને દૂર કરી, સારા આરોગ્ય માટે **સંપૂર્ણ સસ્તા પ્રયાસો** શક્ય બને છે.

1. **ટકાઉ આરોગ્ય સુધારણા:**
   જીવનના દરેક તબક્કે યોગ્ય પોષણ મેળવવાથી, લોકો લાંબા ગાળે સ્વસ્થ અને મજબૂત રહે છે, જે **સંજીવાણ આરોગ્ય** માટે આધાર બની શકે છે.

2. **આગામી પેઢી માટે આરોગ્ય સુધારણા:**
   આ અભિગમ એ જ પેઢી માટે આરોગ્ય સુધારણાને પરવાનગી આપે છે, પણ આગળની પેઢી માટે પણ. યોગ્ય પોષણ અને આરોગ્ય સેવા પ્રવૃત્તિઓ પૂર્ણ થતા, પેઢી બદલાવને મૂકે છે.

સંતુલિત આહાર અને ખોરાકની વિવિધતા

❖ ખોરાક એટલે શું?

ખોરાક એ કોઈ પણ પૌષ્ટિક પદાર્થ છે જે ખાઈ અથવા પી શકાય અને એ ખાવાથી શરીરને કામ કરવાની શક્તિ અને પોષણ મળે છે અને આપણી વૃદ્ધિ થાય છે.

❖ ખોરાકના મુખ્ય ત્રણ કાર્યો શું છે?

1. ખોરાક શરીરને શારીરિક પ્રવૃત્તિઓ કરવા અને સ્વસ્થ અને સક્રિય રહેવા માટે ઊર્જા પ્રદાન કરે છે.
2. ખોરાક શરીરને વૃદ્ધિ માટે નવા પેશીઓ અને કોષો બનાવવામાં મદદ કરે છે.
3. ખોરાક શરીરના ક્ષતિગ્રસ્ત ભાગોને સુધારવા અને બદલવામાં મદદ કરે છે.

રોજિંદા જીવનમાં પોષકતત્વોની જરૂરિયાત પુરી કરવા ખોરાકના વિવિધ જૂથોનો સમાવેશ કરવો જરૂરી છે.

❖ 10 જરૂરી ખોરાકના જૂથો:

1. **અનાજ:** અનાજ, સફેદ મૂળ અને કંદ, અને કેળ
2. **કઠોળ:** કઠોળ, વટાણા અને દાળ
3. **તેલીબીયા અને બીજ:** પ્રોટીન, આયર્ન અને અન્ય વિટામિન્સ અને ખનિજોનો સ્ત્રોત
4. **ડેરી:** પ્રોટીન, વિટામિન્સ અને કેલ્શિયમનો સારો સ્ત્રોત
5. **માંસ, મરઘાં અને માછલી:** પ્રોટીનનો સ્ત્રોત
6. **ઇંડા:** પ્રોટીનનો સ્ત્રોત
7. **લીલા પાંદડાવાળા શાકભાજી:** વિટામિન્સ, ખનિજો, કાર્બોહાઇડ્રેટ્સ અને ફાઇબરનો સ્ત્રોત
8. **અન્ય વિટામિન A સમૃદ્ધ ફળો અને શાકભાજી:** વિટામિન્સનો સ્ત્રોત
9. **અન્ય શાકભાજી:** વિટામિન્સ, ખનિજો, કાર્બોહાઇડ્રેટ્સ અને ફાઇબરનો સ્ત્રોત
10. **અન્ય ફળો:** વિટામિન્સનો સ્ત્રોત

ખોરાકના જૂથો અને કાર્યો:

ખોરાકના જૂથો અને કાર્યો

૧. a. અનાજ: ઘઉં, ઘઉંનો લોટ, ચોખા, ચોખાના ટુકડા, મકાઈ, જવ, ઓટ્સ (જય), સુજી, વર્મિસેલી (સેવિયન), ફૂલેલા ચોખા વગેરે.

b. મિલેટ્સ (બરછટ ધાન્ય): જુવાર, રાગી, કોદરી, સામો, બાજરી વગેરે.

તે કાર્બોહાઇડ્રેટથી સમૃદ્ધ છે.

કાર્બોહાઇડ્રેટ આપણને ઊર્જા અને ફાઇબર આપે છે.

૨. દાળ અને કઠોળ: ચણા દાળ, ચણાનો લોટ (બેસન), મગની દાળ, કાળા ચણા, અડદની દાળ, તુવેર દાળ, ચણા (સફેદ/કાળી/લીલા ચણા), ફણગાવેલા કઠોળ, રાજમા, ચોડી, સોયાબીન વગેરે.

તે પ્રોટીનથી સમૃદ્ધ છે.

૩. શાકભાજી અને ફળો: આ જૂથ વિટામિસ અને ખનિજો પ્રદાન કરે છે. આપણા શરીરને સામાન્ય માટે વિટામિન અને ખનિજોની જરૂર છે.

શરીરની કામગીરી અને ચેપ સામે લડવામાં મદદ કરે છે.

a. શાકભાજી

લીલા પાંદડાવાળા શાકભાજી - પાલક, રાઈના પાન (સરસોન), મેથીના પાન (મેથી), બથુઆ, કોથમીરના પાંદડા (ધનિયા), ફુદીના, વગેરે;

અન્ય શાકભાજી - ગાજર, ડુંગળી, રીંગણ, લેડી ફિંગર, કાકડી, ફૂલકોબી, ટામેટા, કેપ્સિકમ, કોબીજ વગેરે;

મૂળ અને કંદ - બટાકા, શક્કરટેટી, યમ, કોલોસિયા અને અન્ય મૂળ શાકભાજી;

b. ફળ - કેરી, જામફળ, પપૈયા, નારંગી, તરબૂચ, લીંબુ, દ્રાક્ષ, આમળા વગેરે.

૪. દૂધ અને પ્રાણી ઉત્પાદનો: આ જૂથમાં એવા ખોરાકનો સમાવેશ થાય છે જે સારી ગુણવત્તાવાળા પ્રોટીન પ્રદાન કરે છે. શરીરના પેશીઓ અને સ્નાયુઓ પ્રોટીન બનાવવા અને સમારકામ માટે મહત્વપૂર્ણ છે.

a. દૂધ અને દૂધની બનાવટો - દૂધ, દહીં, ચીઝ, પનીર, વગેરે.

b. પ્રાણી ઉત્પાદનો - માંસ, ઇંડા, માછલી, ચિકન, યકૃત વગેરે.

૫. ચરબી/તેલ, ખાંડ અને સૂકા મેવા: આ જૂથમાં એવા ખોરાકનો સમાવેશ થાય છે જેમાં ઊર્જાનું પ્રમાણ વધારે હોય છે.

a. તેલ અને ચરબી - માખણ, ઘી, શાકભાજી રાંધવાનું તેલ જેમ કે મગફળીનું તેલ, સરસવનું તેલ, નાળિયેર તેલ વગેરે;
b. ખાંડ - ખાંડ, ગોળ, મધ;
c. સૂકા મેવા - સીંગદાણા, બદામ, કાજુ, પિસ્તા, અખરોટ વગેરે.

❖ પોષકતત્વો એટલે શું?

- પોષક તત્વો એ ખોરાકમાં રાસાયણિક સંયોજનો છે જેનો ઉપયોગ શરીર દ્વારા યોગ્ય રીતે કાર્ય કરવા અને આરોગ્ય જાળવવા માટે થાય છે.
- પોષતત્વોની જરૂરિયાત પ્રમાણે બે પ્રકારના હોય છે:

૧. શરીર દ્વારા વધારે માત્રામાં જરૂરી છે- કાર્બોદિત પદાર્થો, પ્રોટીન, ચરબી

૨. શરીર દ્વારા ઓછી માત્રામાં જરૂરી છે- ખનીજદ્રવ્યો જેવા કે સોડિયમ પોટેશિયમ, કેલ્શિયમ, લોહતત્વ અને વિટામિન જેવા કે વિટામિન એ, વિટામિન બી કોમ્પ્લેક્સ, વિટામિન સી, વિટામિન ડી, વિટામિન ઈ, વિટામિન કે વગેરે.

❖ સંતુલિત આહાર એટલે શું?

સંતુલિત આહાર આરોગ્ય જાળવવા, વૃદ્ધિને વધારવા અને ઉર્જા પ્રદાન કરવા માટે યોગ્ય પ્રમાણમાં તમામ જરૂરી પોષક તત્વો પૂરા પાડે છે. તેમાં કાર્બોહાઇડ્રેટ્સ, પ્રોટીન, ચરબી, વિટામિન્સ, મિનરલ્સ, ફાઇબર અને પાણીનો સમાવેશ થાય છે.

❖ ફૂડ પિરામિડ

ફૂડ પિરામિડ એ એક દૃશ્યગત માર્ગદર્શિકા છે જે લોકોને એ સમજવા માટે મદદ કરે છે કે સ્વસ્થ અને સંતુલિત આહાર કેવી રીતે બનાવવો. આમાં ખોરાકના વિવિધ જૂથો અને

તેઓ કઈ માત્રામાં ખાવા જોઈએ તે દર્શાવવામાં આવે છે. પિરામિડના દરેક સ્તરે ખોરાકના જૂથો પ્રદર્શિત છે. પિરામિડની નીચેનો ભાગ વધુ જબરદસ્ત હોય છે, જેનો અર્થ છે કે તે જૂથમાં ખાવા માટે વધુ ખોરાક હોવો જોઈએ.

- **ફૂડ પિરામિડનો:**

સ્ત્રોત: ભારતીઓ માટે ભોજનને લગતી માર્ગદર્શિકા, નેશનલ ઇન્સ્ટિટ્યૂટ ઓફ ન્યૂટ્રિશન , ૨૦૧૮-2020

1. પિરામિડનો તળિયો: કાર્બોહાઇડ્રેટ (ઊર્જા)

પિરામિડના તળિયે કાર્બોહાઇડ્રેટ છે, જે આપણા આહારમાં સૌથી મોટું ભાગ ધરાવે છે. કાર્બોહાઇડ્રેટ આપણા શરીર માટે મુખ્ય ઊર્જા સ્ત્રોત છે. આ ખોરાક એ શરીરની દૈનિક કાર્યક્ષમતા અને શારીરિક પ્રવૃત્તિ માટે જરૂરી ઊર્જા પ્રદાન કરે છે.

- ભારતીય આહારમાં ઉદાહરણ: ચોખા, ઘઉં, મકાઈ, જવાર, બાજરી, કંદમૂળ અને બટાકા.
- કેવું મહત્વ છે: કાર્બોહાઇડ્રેટ ઊર્જા પ્રદાન કરે છે, જે શરીરના તમામ કાર્યો માટે જરૂરી છે. પૂરેપૂરી અન્ન (બ્રાઉન રાઇસ અને સંપૂર્ણ ઘઉં) માં ફાઇબર પણ હોય છે, જે પચનમાં મદદ કરે છે.

2. મધ્યમ સ્તર: શાકભાજી અને ફળો

- બીજું સ્તર શાકભાજી અને ફળો ધરાવે છે. આ ખોરાક વિટામિન્સ, ખનિજ અને ફાઇબરથી ભરપૂર હોય છે. ભારતીય આહારમાં, આ ખોરાકનો સમાવેશ હમેશાં હોવો જોઈએ.
- શાકભાજી ઉદાહરણ: પાલક, મેથી, ગાજર, ટામેટા, કોબીજ, અને મોસમી શાકભાજી.
- ફળો ઉદાહરણ: સફરજન, નારંગી, આંબો, પપૈયા, દ્રાક્ષ, કેળા, અને અનર.
- કેવું મહત્વ છે: શાકભાજી અને ફળો રોગપ્રતિકારક શક્તિ વધારવા, બીમારીઓથી બચાવવા અને સ્વસ્થ રહેવા માટે મદદરૂપ છે. આ ખોરાક ઓછા કૅલરીઝ ધરાવતાં, પરંતુ પોષક તત્વોથી ભરપૂર હોય છે.

3. ઉપરના મધ્યમ સ્તર: પ્રોટીન (વૃદ્ધિ અને મરામત)

ત્રીજા સ્તર પર પ્રોટીન છે, જે શરીરના પેશીઓ અને જીવનતંત્રના વિકાસ અને મરામત માટે ખૂબ જ મહત્વપૂર્ણ છે. પ્રોટીનથી શરીર મજબૂત બને છે, અને રોગપ્રતિકારક શક્તિ વધારે છે.

- ભારતીય આહારમાં ઉદાહરણ: દાળ, મગ, ચણા, પનીર, દૂધ, ઈંડા, મરઘી, માછલી, અને બદામ.
- કેવું મહત્વ છે: પ્રોટીન પેશીઓના વિકાસ, આંતરકોષીય મરામત અને એન્ઝાઇમ ઉત્પાદનમાં મદદરૂપ છે.

4. ટોચનું સ્તર: ચરબી અને તેલ

પિરામિડના ટોચ પર ચરબી અને તેલ છે. આ ખોરાકનું સેવન મર્યાદિત પ્રમાણમાં કરવું જોઈએ. તે આરોગ્ય માટે જરૂરી છે, પરંતુ એનું વધુ પ્રમાણ મોટેરથી થતા આરોગ્ય સંબંધિત સમસ્યાઓને વધારી શકે છે.

- ભારતીય આહારમાં ઉદાહરણ: ઘી, મસાલા તેલ, સૂરજમુખી તેલ, તલનો તેલ, બદામ, કાજુ, મગફળી, અને મોટે આઈલ (માછલી).
- કેવું મહત્વ છે: ચરબી હોર્મોન્સ, મગજ, અને વિટામિન A, D, E, અને K ની શોષણમાં મદદ કરે છે. પરંતુ તેનો ઉપયોગ મર્યાદામાં કરવો જોઈએ.

5. થોડું સેવન: મીઠાઈ, નાસ્તો અને પ્રોસેસ્ડ ખોરાક

પિરામિડના ટોચ પર મીઠાઈ, શરબત, અને પ્રોસેસ્ડ ખોરાક છે, જે જથ્થામાં ઓછું અને મર્યાદિત સેવન કરવું જોઈએ. આ ખોરાક ઓછી પોષણ આપે છે અને વધારાની કૅલરી અને ખાધી ફેટ્સ ધરાવે છે.

- ઉદાહરણ: ગુલાબ જમુન, જલેબી, કેક, બિસ્કીટ, ચિપ્સ.
- કેવું મહત્વ છે: આ ખોરાકનો ઉપયોગ મર્યાદિત કરવો જોઈએ, કારણ કે તે સ્વાસ્થ્ય માટે નુકસાનદાયક હોઈ શકે છે, જેમ કે મોતા થવા, ચિન્ની અને ફેટ્સના કારણે.

સંતુલિત આહાર કેવી રીતે પ્રાપ્ત કરવું?
• વિવિધ તાજી, રંગબેરંગી અને સ્થાનિક રીતે ઉપલબ્ધ ફળો અને શાકભાજીનું સેવન કરો.
• કુદરતી ફાઇબરથી ભરપૂર હોવાથી આખા ફળો ખાઓ.
• મેંદાથી બનેલા ખોરાક સહિત શુદ્ધ અનાજના વપરાશને મર્યાદિત કરો.
• તમારા આહારમાં દરેક ખોરાક જૂથના ખોરાકનો સમાવેશ કરવાનો પ્રયાસ કરો.
• સરસવનું તેલ, મગફળીનું તેલ, સોયાબીન તેલ વગેરે વનસ્પતિ તેલ પસંદ કરો. રાંધવા/તળવા માટે. રોટેશનમાં વિવિધ તેલનો ઉપયોગ કરવો વધુ સારું છે.
• ખાદ્ય તેલો અને પ્રાણીઓના ખોરાકનો મધ્યમ ઉપયોગ સુનિશ્ચિત કરો.
• માખણ/ઘીનો ઉપયોગ મર્યાદિત કરો અને વનસ્પતી ટાળો અને ફરીથી ગરમ ચરબી અને તેલનો ઉપયોગ કરો.
• રોજ પુષ્કળ પાણી પીવો. ઠંડા પીણાં અને ફળોના રસને બદલે પાણી, છાશ, લસ્સી, નાળિયેર પાણી, લીંબુ પાણી/નિમ્બુ પાની, આમ પાન, કોકમ, સત્તુ વગેરે પીવો જોઈએ.

❖ ખોરાકમાં વિવિધતા શું છે?

- આહારની વિવિધતા એ ચોક્કસ સમયગાળા દરમિયાન ખાવામાં આવેલા ખોરાકના જૂથો દ્વારા નક્કી કરવામાં આવે છે. આથી આહારમાં વિવિધ પ્રકારના ખોરાક અને ખોરાકના જૂથો વધારવાથી જરૂરી પોષક તત્વો પૂરતા પ્રમાણમાં મળી રહે છે. 10 ખાદ્ય જૂથોમાંથી ઓછામાં ઓછા 5 ખાદ્ય જૂથો દરરોજ ખાવા જોઈએ.

❖ પોષણયુક્ત ખોરાક અને ખોરાક માં વિવિધતા કેમ જરૂરી છે?

- સ્ત્રીએ સંતુલિત અને પૌષ્ટિક આહાર લેવો જોઈએ. આહારમાં અનાજ, કઠોળ, લીલા પાંદડાવાળા શાકભાજી, દૂધ, ઇંડા, માંસ અને માછલી સહિતના શાકભાજીનું મિશ્રણ હોવું જોઈએ. માંસ અને બદામ ખાસ કરીને એનિમિક મહિલાઓ માટે સારા છે.

- ચોખા, ઘઉં, રાગી, બાજરી, રોટલી, હલવો, ઇડલી, ડોસા, ઉપમા, પૌઆ વગેરે જેવા અનાજ ખાઓ. સફેદ બ્રેડ, બિસ્કિટ અને રિફાઇન્ડ લોટ (મેંદા)થી બનેલા અન્ય ખોરાકને ટાળો.
- મોસમી અને સ્થાનિક રીતે ઉપલબ્ધ ફળો અને શાકભાજી ઉદારતાથી ખાઓ.
- આહારમાં લીલા પાંદડાવાળા શાકભાજી (પાલક, મેથીના પાંદડા, વગેરે સ્ટાર્ચી શાકભાજી (શક્કરટેટી, યમ, કોલોસિયા વગેરે) અને અન્ય શાકભાજી (બીટરૂટ, રીંગણ, લેડી ફિંગર, ફૂલકોબી, કોબીજ, કઠોળ, ગાજર વગેરે) શામેલ કરો.
- સારી રીતે રાંધેલા ઇંડા, મરઘાં, માછલી વગેરે રાંધેલા માંસ નું સેવન કરો અને દૂધની બનાવટો જેમ કે દહીં, પનીર વગેરેનું મધ્યમ સેવન કરો.
- રોજ મગ, મસૂર, તુવેર, રાજમા વગેરે કઠોળનું સેવન કરો.
- રાંધણમાં સરસવનું તેલ, સોયાબીન તેલ, સૂર્યમુખીનું તેલ, મગફળીનું તેલ વગેરે ચરબીના શાકભાજીના સ્ત્રોતોનો ઉપયોગ કરો.
- દરરોજ પુષ્કળ પ્રવાહી પીવો.
- ઘઉં, ચોખા, તેલ, દૂધ અને મીઠું જેવા ક્લિલેબંધ ખોરાકનું સેવન કરો.

❖ આયોડાઇઝ્ડ મીઠું:

આયોડાઇઝ્ડ મીઠું બાળક ના વિકાસ માંટે ખુબ જ જરૂરી છે. બાળક ના ખોરાક માં હંમેશા આયોડાઇઝ્ડ મીઠા નો જ ઉપયોગ કરવો જોઈએ.

આયોડાઇઝ્ડ મીઠાના નિયમિત ઉપયોગથી થતા ફાયદા:

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

ડબલ ફોર્ટીફાઈડ મીઠું આઈ સી ડી અસ (ICDS)/ પી ડી એસ (PDS) માંથી આપવામાં આવે છે જેમાં આયોડીન અને આયર્ન બંને ફોર્ટીફાય કરવામાં આવ્યા છે.

સામાન્ય રીતે, આપણે દિવસમાં 3 વખત ભોજન લઈએ છીએ: સવારનો નાસ્તો, બપોરનું ભોજન અને રાતનું ભોજન. આ બધામાંથી સવાર ના નાસ્તો ખૂબ જરૂરી છે.

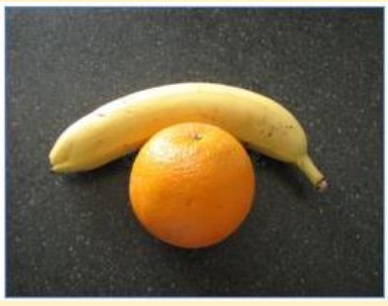
❖ દરેક ભોજન નું મહત્વ:

સવારના નાસ્તાનું મહત્વ

- દરરોજ સવારે નાસ્તો કરવો જોઈએ.
- સવારનો નાસ્તો એ દિવસનો સૌથી મહત્વપૂર્ણ ભોજન છે કારણ કે આપણે રાત્રે કઈપણ ખાતા નથી અને સવાર આપણું પેટ ખાલી રહે છે.
- સવારે નાસ્તો ખાવાથી મગજને ફરીથી કામ કરવા માટે પોષણ મળે છે.
- જો આપણે સારી નાસ્તો નહીં કરીએ, તો આપણે થાક અનુભવીશું અને કામમાં ધ્યાન નહીં રહી શકે.
- આપણને ઉબકા અને માથાની દુખાવી સાથે થાક પણ અનુભવી શકીએ છીએ. સવારનો નાસ્તો આપણને વધુ ઊર્જા આપશે અને આપણી એકાગ્રતામાં સુધારો કરશે.


બીજા નાસ્તા નું મહત્વ-બપોર પહેલાના નાસ્તાનું મહત્વ

- સાવરનો નાસ્તો કર્યા પછી થોડો નાસ્તો લઈ શકાય છે. ચિપ્સ અથવા બિસ્કિટના પેકેટને બદલે એક ફળ અને થોડી મગફળી લો.
- તે ભોજન વચ્ચે ઉર્જામાં વધારો કરે છે અને લોહીમાં શર્કરાનું સ્તર જાળવી રાખે છે. તે પછીના ભોજનમાં માપસર ખોરાક ખાવામાં મદદ કરે છે.
- તે ફળો અને સૂકામેવામાંથી આવશ્યક વિટામિન્સ, ખનિજો અને પ્રોટીન પ્રદાન કરે છે.




બપોરના ભોજનનું મહત્વ

- બપોરનું ભોજન એ મહત્વનું ભોજન છે તે દિવસનું સૌથી મોટું ભોજન હોવું જોઈએ.
- તે શરીર અને મગજને દિવસભર યોગ્ય રીતે કામ કરતા રાખવા માટે ઊર્જા અને પોષક તત્વો પ્રદાન કરે છે.
- બપોરે જમવા આવામાં આવેલ સંતુલિત ભોજન જેમાં તમામ પ ખાધ જૂથો હોય છે તે સ્વાદિષ્ટ અને સ્વસ્થ પસંદગી છે. ઘરે રાંધેલ ખોરાક આપણને ખોરાક અને ઘટકોની ગુણવત્તા પર નિયંત્રણ આપે છે.

સાંજના નાસ્તાનું મહત્વ

- સાંજનો નાસ્તો કામથી આયા પાછી કાંતો કામ વચ્ચે લેવો જોઈએ.
- તે રાતના ભોજનનો સમય થાય ત્યાં સુધી ઊર્જા ટકાવી રાખવામાં મદદ કરે છે.
- સાંજના નાસ્તામાં ચણા, મગફળી, લેવ, એક ફળ વેવાની પ્રયાસ કરી અને ચિપ્સ અથવા નમકિન અથવા ભજીયા સાથે ચા પીવાનું ટાળો.
- તે દિવસના બીજા ભાગમાં આપણને ઊર્જાથી ભરપૂર અને તાજગીભર્યા રાખે છે.

રતના ભોજનનું મહત્વ

- રાતનું ભોજન હળવું હોવું જોઈએ.
- રાતનું તંદુરસ્ત ભોજનથી સારી ઊંઘ આવે છે, બળતરા ઓછી થાય છે, તણાવ ઓછો કરે છે,પાચન સારું થાય છે, લોહીમાં શર્કરાનું પ્રમાણ જાળવે છે અને ચિંતા ઓછી કરે છે.

આટલું યાદ રાખો :

- 10 ખાદ્ય જૂથોમાંથી ઓછામાં ઓછા 5 ખાદ્ય જૂથો દરરોજ ખાવા જોઈએ.
- વિવિધ પ્રકારનો ખોરાક લેવા જોઈએ અને આયોડાઇઝ્ડ મીઠું ખાવું જોઈએ.
- દરેક ભોજન નું મહત્ત્વ જાણવું જરૂરી છે.

સ્વચ્છ જળ, સ્વચ્છતા અને આરોગ્ય નો સંબંધ

❖ સ્વચ્છતા અને આરોગ્ય નું મહત્વ:

સ્વચ્છતા એ પીવાના શુદ્ધ પાણી અને સારવાર અને માનવ મળમૂત્ર અને ગટરના નિકાલ સાથે સંબંધિત જાહેર આરોગ્યની સ્થિતિનો ઉલ્લેખ કરે છે. મળ સાથે માનવ સંપર્ક અટકાવવો એ સ્વચ્છતાનો એક ભાગ છે, જેમ કે સાબુથી હાથ ધોવાનો છે. સ્વચ્છતા પ્રણાલીઓનો ઉદ્દેશ સ્વચ્છ વાતાવરણ પ્રદાન કરીને માનવ આરોગ્યનું રક્ષણ કરવાનો છે જે રોગના સંક્રમણને અટકાવી દેશે, ખાસ કરીને મળ-મૌખિક માર્ગ દ્વારા. ઉદાહરણ તરીકે, બાળકોમાં કુપોષણ અને અટકેલા વિકાસનું મુખ્ય કારણ ઝાડાને પૂરતી સ્વચ્છતા દ્વારા ઘટાડી શકાય છે. અન્ય ઘણા રોગો છે જે સ્વચ્છતાનું સ્તર ઓછું હોય તેવા સમુદાયોમાં સરળતાથી ફેલાય છે, જેમ કે એસ્કેરિયાસિસ (આંતરડાના કીડાનો ચેપ અથવા હેલ્મિન્થિયાસિસનો એક પ્રકાર), કોલેરા, હેપેટાઇટિસ, પોલિયો, શિસ્ટોસોમિયાસિસ અને ટ્રેકોમા, ફક્ત થોડા નામ માટે.

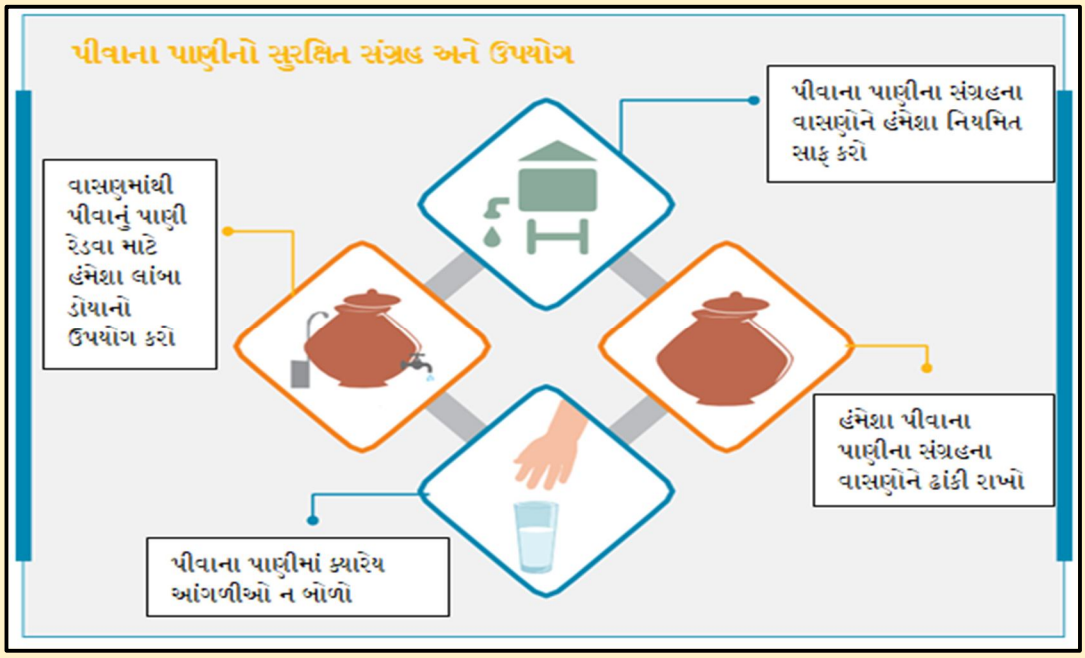
ઘરગથ્થું સ્તરે પાણીનો સુરક્ષિત રીતે ઉપયોગ કરવા અને તેનો સંગ્રહ કરવા માટે શું કરી શકાય છે?

પાણી પુરવઠા યોજના દ્વારા આપવામાં આવતું પાણી સ્વચ્છ અને શુદ્ધ હોવા છતાં જો તેને ઘરગથ્થુ સ્તરે સંગ્રહિત અને યોગ્ય રીતે નિયંત્રિત કરવામાં ન આવે તો તે દૂષિત થઈ શકે છે. ઘરેલું સ્તરે પાણીનું સંચાલન કરતી વખતે કેટલીક સાવચેતી રાખવી આવશ્યક છે.

ઘરગથ્થું સ્તરે પીવાનું પાણી માટે યાદ રાખવા જેવી બાબતોઃ

- પાણી સામાન્ય રીતે ક્યારેય વાસી બનતું નથી, જો કે સંગ્રહ પાત્ર અશુદ્ધ હોય, તો શુદ્ધ પાણી પણ દૂષિત થઈ શકે છે. તેથી, સંગ્રહ પાત્રને દરરોજ સાફ કરવા જોઈએ.

- પીવાનું પાણી સંગ્રહિત કરવા માટે ઉપયોગમાં લેવાતા કોઈ પણ પાત્રમાંથી પાણી બહાર કાઢવા માટે ચોખ્ખા લાડલાનો ઉપયોગ કરો.
- સંગ્રહ પાત્રને એવી ઊંચાઈએ રાખો કે જ્યાં બાળકોને સરળતાથી પહોચી ન શકે. બાળકો અજાણતાં પાણીને દૂષિત કરી શકે છે.



❖ વ્યક્તિગત અને પર્યાવરણ ની સ્વચ્છતા

વ્યક્તિગત સ્વચ્છતા:

વ્યક્તિગત સ્વચ્છતા એ પોતાને બીમારીથી બચાવવાનો સૌથી અસરકારક માર્ગ છે. જો લોકો સારી વ્યક્તિગત સ્વચ્છતા જાળવે તો જંતુઓ શરીરની અંદર જાય તેવી સંભાવના ઓછી છે. વ્યક્તિગત સ્વચ્છતામાં સ્નાન, હાથ ધોવા અને દાંત સાફ કરવા વગેરે જેવી આદતોનો સમાવેશ થાય છે જે જંતુઓને શરીરથી દૂર રાખે છે. તંદુરસ્ત વ્યક્તિગત સ્વચ્છતાની આદતો

તમારા હાથ ધોઓ: હાથ ધોવાથી બીમારીઓ અને ચેપ ફેલાતો અટકે છે. ધોયા વિનાના હાથના જંતુઓ ખોરાક અને પીણાંમાં પ્રવેશી શકે છે જ્યારે આપણે ખોરાક તૈયાર કરીએ છીએ અથવા તેનું સેવન કરીએ

છીએ. જંતુઓને દરવાજાના હેન્ડલ્સ, ટેબલટોપ્સ, વાસણો અથવા રમકડાં જેવી અન્ય વસ્તુઓમાં પણ સ્થાનાંતરિત કરી શકાય છે અને અન્ય વ્યક્તિના હાથમાં પ્રસારિત કરી શકાય છે. તેથી હાથ ધોવા દ્વારા જંતુઓને દૂર કરવાથી ઝાડા અને શ્વસન, આંખ અને ત્વચાના ચેપને રોકવામાં મદદ મળે છે.

તમારે ક્યારે હાથ ધોવા જોઈએ:

- શૌચાલયનો ઉપયોગ કર્યા પછી
- પહેલાં, દરમિયાન અને ખોરાક તૈયાર કર્યા પછી
- ખોરાક ખાતા પહેલા અને પછી
- બીમાર વ્યક્તિની સંભાળ રાખતા પહેલા અને પછી
- કાપ અથવા ઘાની સારવાર કરતા પહેલા અને પછી
- શૌચાલયનો ઉપયોગ કરનારા બાળકને સાફ કર્યા પછી
- તમારા નાકને ફૂંક્યા પછી, ઉધરસ અથવા છીંક ખાધા પછી
- પ્રાણીઓ, પ્રાણીઓના ખોરાક અથવા પ્રાણીઓના કચરાને સ્પર્શ કર્યા પછી અને સંભાળ્યા પછી
- કચરાને સ્પર્શ કર્યા પછી
- જ્યારે તમારા હાથ ગંદા હોય

પર્યાવરણીય/આસપાસની સ્વચ્છતા:

પર્યાવરણીય/આસપાસની સ્વચ્છતા પર્યાવરણીય પરિબળોને નિયંત્રિત કરી રહી છે જે ચેપ અને રોગોનું કારણ બની શકે છે. તેમાં કચરાનું સંચાલન, પીવાનું સલામત પાણી, કચરાનો નિકાલ અને

જંતુ નિયંત્રણનો સમાવેશ થાય છે. વ્યક્તિ, પરિવાર અને સમુદાયના સ્વાસ્થ્ય અને સુખાકારી માટે પર્યાવરણીય સ્વચ્છતા મહત્વપૂર્ણ છે.

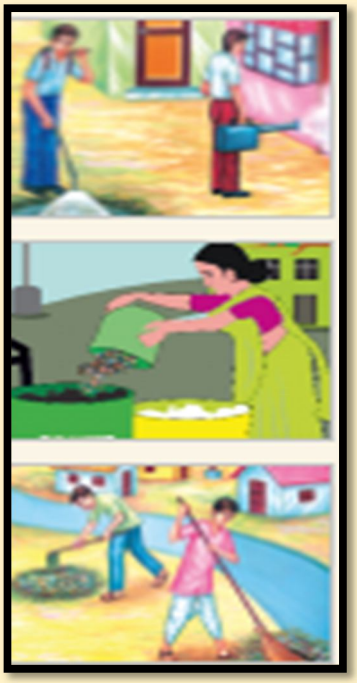
આસપાસની સ્વચ્છતા જાળવવાની ટીપ્સ:

1. ઘરની અંદર

- તમારા ઘરની અંદર અથવા તેની નજીક પાણી સાથે ખુલ્લા કન્ટેનર/ડોલ ન છોડો, કારણ કે આ સ્થળો મેલેરિયા, ડેન્ગ્યુ અને ચિકનગુનિયા પેદા કરતા મચ્છરોના સંવર્ધન માટેનું વાતાવરણ તરીકે કામ કરે છે.
- કરોળિયાના જાળા અને ધૂળ દૂર કરવા માટે છત, દિવાલો અને પંખા, બલ્બ, ટ્યુબ લાઇટ્સ વગેરે ઉપકરણોને સાફ કરો.
- ફ્લોરને નિયમિત રીતે સાફ કરો અથવા મોપ કરો.
- જમીન, ટેબલ, પલંગ, ખુરશી વગેરેમાંથી ઢોળાયેલા ખોરાકને તરત સાફ કરો.
- બાથરૂમ, રસોડું અને અન્ય વિસ્તારોમાં પાણી ન આવે તે માટે ડ્રેનેજ સિસ્ટમ તપાસો.
- કોઈપણ લીકેજ માટે પાઇપો અને નળને રિપેર કરો.
- રસોડામાં અને અન્ય યોગ્ય સ્થળોએ ડસ્ટબિન મૂકો. ઉપયોગ પછી ડસ્ટબિન ખાલી કરવાની ખાતરી કરો.

- જંતુઓને રોકવા માટે જંતુનાશકો અને જંતુઓ દૂર કરનારાઓનો ઉપયોગ કરો. તેમને બાળકો અને પ્રાણીઓથી દૂર રાખવાની ખાતરી કરો.

2.ઘરની બહાર



- ઘરની બહાર પાણી ન આવે તે માટે ગટરોની તપાસ કરો.
- હંમેશાં તમારા ઘરની આસપાસ એકત્રિત થાય તેવું પાણી સાફ કરો અને એ પણ સુનિશ્ચિત કરો કે તમારા ઘરની નજીકની ગટરો (ડ્રેનેજ) નિયમિત પણે સાફ કરવામાં આવે જેથી મચ્છરોના સંવર્ધનને ટાળી શકાય અને મેલેરિયા, ડેન્ગ્યુ અને ચિકનગુનિયાથી તમારી જાતને બચાવી શકાય.
- મચ્છરોના સંવર્ધનને રોકવા માટે ઘરની બહાર એકત્રિત પાણીમાં કેરોસીનતેલ છાંટવું.
- વર્ષમાં ઓછામાં ઓછી બે વાર ઓવરહેડ ટેન્ક સાફ કરો. દૂષિત પાણી ફૂડ પોઇઝનિંગ/ઝાડાનું કારણ બની શકે છે.
- કચરો ફક્ત ડસ્ટબિનમાં ફેંકી દો. તેમને ઘરની અંદર, અથવા ઘરની બહાર શેરીઓમાં ન ફેંકો.
- હંમેશાં ખાતરી કરો કે તમારા ઘરની નજીકની ઝાડીઓ સારી રીતે સાફ થઈ જાય.
- તમારા પાલતુ પ્રાણીઓ જેવા કે ગાય, ભેંસ, કૂતરા, બકરી વગેરે ને સ્વચ્છ રાખો.
- પ્રાણીઓના શેડને સાફ રાખો, તેમના કચરાનો યોગ્ય રીતે બંધ ડસ્ટબિનમાં નિકાલ કરો અને કચરાને ખાડામાં માનવ સંપર્કથી દૂર ફેંકી દેવાની ખાતરી કરો, અને તેને કાદવથી ઢાંકી દો.

- રસ્તાઓ, ગુલ્લી, મહોલ્લાને છાણ અને કચરાથી મુક્ત રાખો.

❖ શૌચાલય ના ઉપયોગ નું મહત્વ

મળ અને પેશાબ: ઝાડા અને અન્ય ચેપી રોગોને રોકવા માટે, શૌચ અને પેશાબ માટે યોગ્ય શૌચાલયોનો ઉપયોગ કરો. શિશુઓ અને નાના બાળકોના મળ અને પેશાબના કચરાનો નિકાલ શૌચાલય અથવા શૌચાલયમાં અથવા ખાડામાં કરવો જોઈએ અને પછી માટીના સ્તરથી ઢાંકી દેવો જોઈએ. જે સમુદાયોમાં શૌચાલય અથવા શૌચાલયની સુવિધા ઉપલબ્ધ નથી, ત્યાં તેઓએ આવી સુવિધાઓ બનાવવાના પ્રયાસો કરવા જોઈએ. તેઓ સરકારની સ્વચ્છ ભારત યોજનામાંથી શૌચાલય બનાવવા માટે અનુદાન માટે પણ અરજી કરી શકે છે. આ યોજના હેઠળ ઘરગથ્થુ શૌચાલયો તેમજ સામુદાયિક શૌચાલયો બનાવવાની જોગવાઈઓ છે.

❖ હાથ ધોવાની સાચી રીત :-

આટલું યાદ રાખો :

- સ્વચ્છ પાણી પીવું જોઈએ.
- જમવાનું બનાવતા પહેલા, શૌચાલય ગયા પછી, બાળકો ને અડ્યા પાછી અને ઢોર ચારાના કામ કર્યા પાછી હાથ ધોવા જોઈએ.
- શૌચાલય નો ઉપયોગ કરવો જોઈએ.

એનિમિયા (પાંડુ રોગ/ લોહીની ફિકાસ)

❖ એનિમિયા એટલે શું?

શરીરમાં જ્યારે લાલ રક્તકણો ઓછા થાય છે, ત્યારે લોહીની ઊણપ સર્જાય છે. આ સમસ્યાને એનિમિયા કહેવામાં આવે છે. લોહીમાં હિમોગ્લોબિનની ઊણપ થવા થી લોહી ફિક્કુ પડે છે, નબળાઈ વર્તાય છે. એનિમિયાનો યોગ્ય ઈલાજ ન કરાવવા પર ગંભીર બીમારીઓ થઈ શકે છે.

- એનિમિયા એક એવી સ્થિતિ છે જેમાં લોહીના લાલ રક્તકણોની સંખ્યા અથવા તેમની ઓક્સિજન-વહન કરવાની ક્ષમતા, શરીરની શારીરિક જરૂરિયાતોને પહોંચી વળવા માટે અપર્યાપ્ત થઈ જાય છે.
- સાદી ભાષામાં એમ પણ કહેવાય કે લોહીમાં ફિક્કાશ આવી જાય છે.

❖ એનિમિયા કોણે-કોણે થઈ શકે?

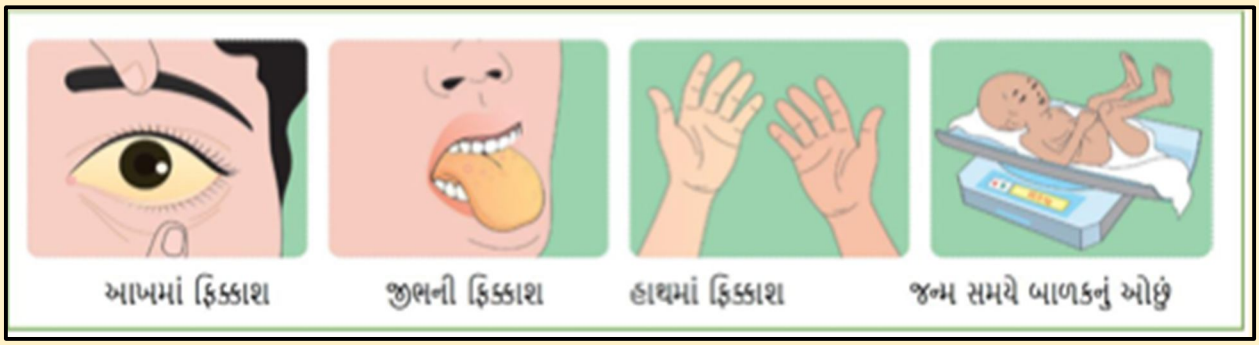
સ્ત્રોત: નેશનલ આયરન પ્લસ ઈનિશિયેટિવ (NIPI)

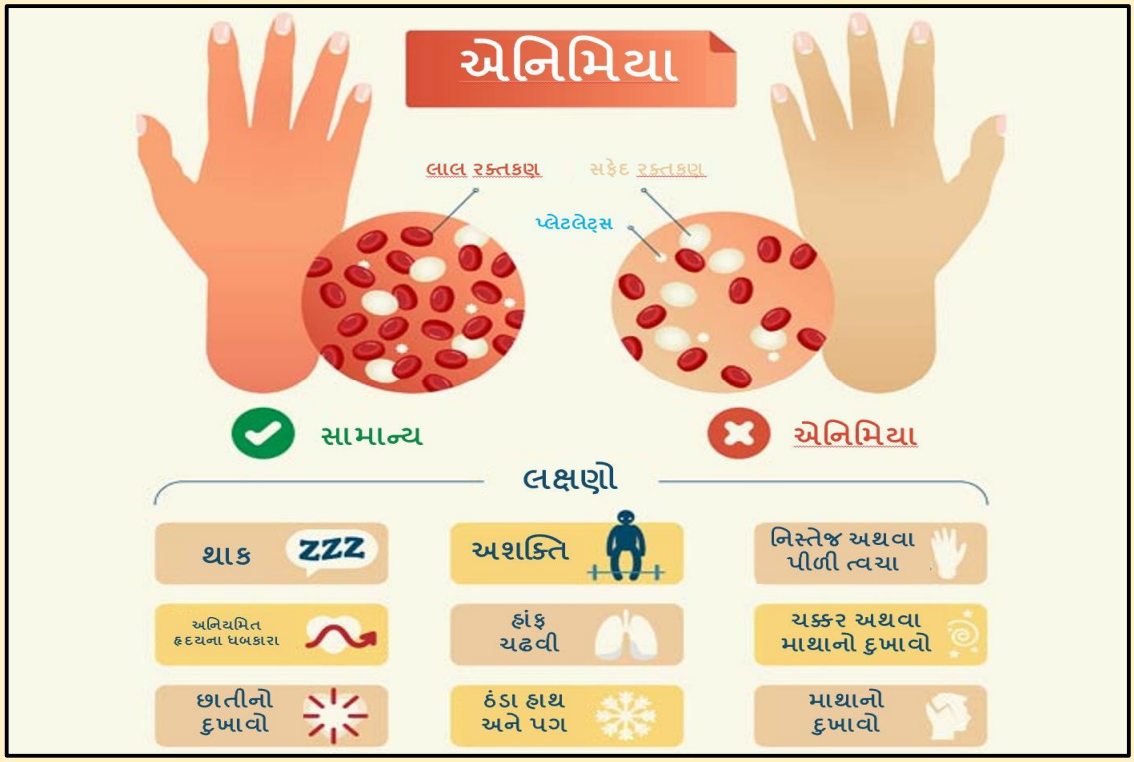
❖ **એનિમિયા થવાના કારણો:**

- રોજિંદા આહારમાં લોહતત્વ યુક્ત ખોરાકની અપૂરતી માત્રા
- લોહતત્વ યુક્ત ખોરાક સાથે ચા, કોફી પીવી
- માસિકના દરમિયાન, પ્રસવમાં કે કોઈ ઇજાના કારણે વધારે માત્રામાં લોહી વહી જવું
- વારંવાર મલેરિયા થવાથી - હિમોગ્લોબિનના સ્તરમાાં ઘટાડો થાય છે
- કૃમિ હોવાથી

❖ **એનિમિયાના લક્ષણો:**

- આંખો, જીભ અને નખમાં ફિક્કાશ
- થાક લાગવો
- ભૂખ ન લાગવી
- શરીરમાં અશક્તિ લાગવી
- હાંફ ચઢવો
- ચક્કર આવવા
- નખ બરડ, ફીકા અને ચમચી જેવા થઈ જવા-અતિ ગંબીર એનિમિયાની પરિસ્થિતિમાં
- ઝડપી અને અનિયમિત હૃદયના ધબકારા





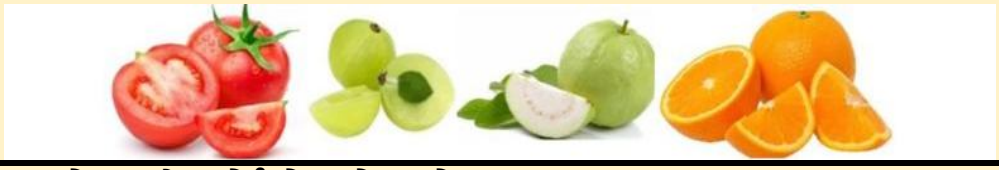
❖ એનિમિયાના આડ અસરો:

- કામ કરવાની ક્ષમતામાં ઘટાડો
- ભણતરમાં નબળો દેખાવ
- રોજિંદા ઘરકામ કરવામાં ખૂબ અશક્તિ લાગવી
- વારંવાર માંદા પડવું
- કિશોરીઓમાં અનિયમિત માસિક આવર્તન
- ભૂખ ઓછી લાગવી
- રોગ પ્રતિકારક શક્તિમાં ઘટાડો
- કાર્યશક્તિમાં ઘટાડો

❖ લોહતત્વ ખોરાક માં ક્યાંથી મળે છે?

- લીલા પાંદડાવાડા શાકભાજી- મેથી, પાલક, મૂળાના પાન, સરગવાના પાન, અરબીના પાન (પાતરા), તાંદળજો, વગેરે
- કઠોળ- મગ, ચણા, મઠ, ચોળા, વાલ, વગેરે
- મિલેટ્સ- બાજરી, જોવર, રાગી
- ખજૂર
- બીટ
- ઈંડા, માંસ, મચ્છી

❖ એનિમિયા કેવી રીતે અટકાવી શકાય/નિવારણ પગલા:

અનિમિયા (પાંડુરોગ) નિવારણના પગલાં
અનેમિયાથી બચવા માટે લોહતત્વથી ભરપૂર ખોરાકનો ભોજનમાં નિયમિત રીતે સમાવેશ કરવો • લીલા પાંદડાવાળા શાકભાજી - પાલક, મેથી, સરગવો • માંસાહારી ભોજન -ઈંડા, માંસ, માછલી • ઘઉં, જુવાર, બાજરી, નાગલી, અડદ, ફણગાવેલા કઠોળ, કાળા ચણા, મગફળી, તલ, ખજૂર, સુકોમેવો વગેરે • લોહતત્વથી ફોર્ટિફાઇડ ખોરાક ખાવો 
વિટામિન સી થી ભરપૂર ખાદ્ય પદાર્થોનો ઉપયોગ કરવો • વિટામિન સી યુક્ત ખાદ્ય પદાર્થો શરીરમાં લોહતત્વનું શોષણ કરવામાં સહાયરૂપ બને છે. • રોજિંદા ખોરાકમાંથી લોહતત્વનું શોષણ વધારવા માટે ભોજનમાં આંબળા, જમફળ, ટામેટાં સંતરા, લીંબુ, વગેરે નો સેવન કરવો જોઈએ. 
લોહતત્વયુક્ત ખોરાક સાથે ચા-કોફી નો ઉપયોગ ટાળો

- લોહતત્વયુક્ત ખોરાક કે લોહતત્વની ગોળી લીધાના એક કલાક પહેલા કે એક કલાક સુધી ચા કે કોફી પીવાનું ટાળો કારણ કે ચા- કોફી લોહતત્વ પૂરેપૂરું શોષણ થવા દેતું નથી.
- તેમજ કેલ્શિયમની ગોળી અને દૂધ પણ લોહતત્વના શોષણને અટકાવે છે તેથી લોહતત્વની ગોળી સાથે લેવા જોઈએ નહીં.

રોજિંદા ખોરાકમાંથી હંમેશા પુરતું લોહતત્વ મળી શકતું નથી તે માટે લોહતત્વની ગોળી લેવી જોઈએ.

લોહતત્વની ગોળી

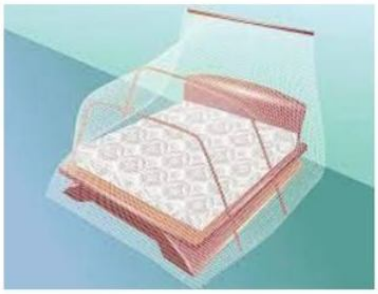
દર ૬ મહિને કૃમિનાશક ગોળી ખાવી

- કૃમિના કારણે યોગ્ય પોષકતત્વો નું શોષણ યોગ્ય રીતે થઈ ધર્મનુ નથી જેથી અનેમિયા તથા અન્ય સૂક્ષ્મ પોષકતત્વોની ઉણપ જેવા રોગો થઈ શકે છે.
- કૃમિ પગના તળિયેથી શરીરમાં પ્રવેશ કરે છે એટલે પગમાં હંમેશા ચપ્પલ કે બુટ પહેરવાની ટેવ પાડવી
- અનીમિયાથી બચવા કૃમિથી બચવું ખૂબ જરૂરી છે. ૬ મહિનામાં એકવાર કૃમિની દવા આંગણવાડી પરથી આપવામાં આવે છે.

કૃમિનાશક ગોળી

રાત્રે ઊંઘતા સમયે મચ્છરથી બચવા મચ્છરદાનીનો ઉપયોગ કરો

- ચેપી મચ્છર કરડવાથી લાલ રક્ત કોશિકાઓને નુકશાન થઈ શકે છે.
- આ પ્રક્રિયા શરીરમાં લાલ રક્તકણોની સંખ્યામાં ઘટાડો કરે છે અને ગંભીર એનિમિયામાં પરિણમી શકે છે.




મચ્છરથી બચવા માટે મચ્છરદાનીનો ઉપયોગ કરો

આટલું યાદ રાખો :

- દૈનિક આહારમાં લોહતત્વ યુક્ત ખોરાક જેમકે લીલા પાંદડા વાડા શાકભાજી, ખજૂર, અસાડિયો, તલ, બાજરી, વગેરે ખાવાથી એનિમિયા થઈ બચી શકાય છે.

બાળકો અને યુવાન બાળકો માટે પોષણ (IYCN પ્રેક્ટિસ)

❖ જીવન ના પ્રારંભિક ૧૦૦૦ દિવસ:-

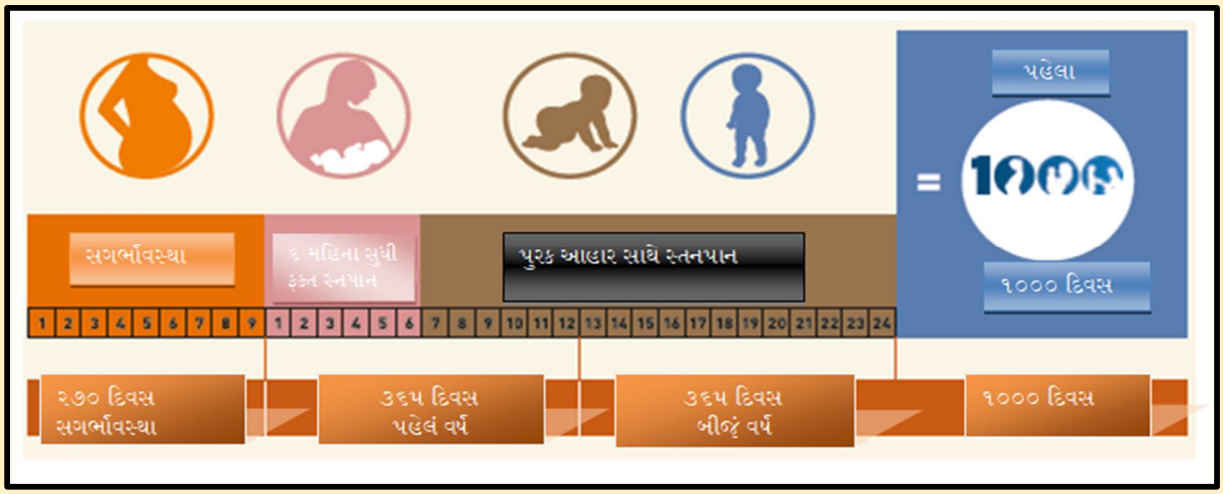
સગર્ભા અવસ્થાના ૨૭૦ દિવસ અને બાળક ના જન્મ ના બે વર્ષ ૭૩૦ દિવસ મળીને ૧૦૦૦ દુવાસ થાય.

❖ પ્રારંભિક ૧૦૦૦ દિવસ નું મહત્વ: -

કોઈ પણ ઘરની મજબૂતી માટે ઘરનો પાયો મજબુત હોવો જરૂરી છે તેવી જ રીતે તંદુરસ્ત જીવન માટે જીવન ના પહેલા ૧૦૦૦ દિવસ પર ધ્યાન રાખવું જરૂરી છે.

❖ જીવન ના પ્રારંભિક ૧૦૦૦ દિવસ દરમિયાન:-

- વિકાસ અને વૃદ્ધિ સૌ થી વધારે થાય છે.
- ગર્ભ ધારણ ના ૧૬માં દિવસથી બાળક ના મગજ નો વિકાસ શરુ થઇ જાય છે.
- જન્મ ના પહેલા વર્ષ માં બાળકનો વિકાસ અને વૃદ્ધિ સૌથી વધારે હોય છે. જન્મ ના ૬ મહિનામાં બાળકનું વજન તેના જન્મ ના વજન કરતા બમણું થઇ જાય અને ૧ વર્ષ માં ત્રણગણું વધે છે.



❖ પ્રસ્તુતિ પહેલાની સંભાળ:

- 12 અઠવાડિયાની અંદર ગર્ભાવસ્થાની પ્રારંભિક નોંધણી.
- વજન, અને ઊંચાઈ આંગણવાડી/સબસેન્ટર/પીએચસી માં કરવામાં આવે છે. મમતા દિવસ પર, વજન અને બીપી માપન કરવામાં આવે છે.

- પીએચસી માં વિવિધ પ્રકારના ટેસ્ટ કરવામાં આવે છે (લોહ તત્વ, બ્લડ ગ્રુપ,બ્લડ શુગર, બીપી, HIV માટે પરીક્ષણ)
- આયર્ન અને ફોલિક એસિડની ગોળી
- કેલ્શિયમની ગોળી
- Dhanur (ટિટાનસ ટોક્સોઇડની) રસી
- કૃમિની ગોળી
- THR- માતૃશક્તિના પેકેટો
- આયોડાઇઝ્ડ/ડબલ ફોર્ટિફાઇડ મીઠાનો વપરાશ
- ગંભીર એનિમિયા, કેસ મેનેજમેન્ટ સાથે સગર્ભા સ્ત્રીઓનું ટ્રેકિંગ

સગર્ભાવસ્થાના જોખમના ચિહ્નો અને લક્ષણોની ઓળખ

❖ સ્તનપાન

જન્મના 1 કલાકની અંદર સ્તનપાનની શરૂઆત:

- માતાને ડિલિવરી પછી તરત જ સ્તનપાન શરૂ કરવા પ્રોત્સાહિત કરવું જોઈએ.

- આ માતા અને બાળક બંને માટે ફાયદાકારક છે કારણ કે તે બાળકને વધુ મજબૂત બનાવે છે એટલું જ નહીં પરંતુ પ્લેસેન્ટાની ઝડપી ડિલિવરીકરવામાં પણ મદદ કરે છે અને રક્તસ્ત્રાવ ઘટાડે છે.
- કોલોસ્ટ્રમ તરીકે ઓળખાતી માતાનું પહેલું પીળું જાડું દૂધ બાળકને ખવડાવવું જોઈએ અને તેને ફેંકી દેવું જોઈએ નહીં કારણ કે તે બાળકને ચેપથી અટકાવે છે.
- પ્રિ લેક્ટિયલ ફીડ્સટાળવું: મધ, ખાંડનું પાણી વગેરે બાળકને ન આપવું જોઈએ કારણ કે તે ચેપ અથવા ઝાડાનું કારણ બની શકે છે. બાળકને માત્ર માતાનું દૂધ જ ખવડાવવું જોઈએ.

છ મહિનાની ઉંમર સુધી માત્ર સ્તનપાન:

- બાળકને છ મહિનાની ઉંમર સુધી માત્ર સ્તનપાન કરાવવું જોઈએ અને અન્ય કોઈ બહારનું ફીડ આપવું જોઈએ નહીં.
- માતાનું દૂધ બાળકની આહારની તમામ જરૂરિયાતો પૂરી પાડે છે. તે બાળકને પૂરતું પાણી પણ પ્રદાન કરે છે, આમ ઉનાળાના દિવસોમાં પણ બાળકને પાણી ન આપવું જોઈએ.

- તે સલામત છે, બીમારીઓ સામે રોગપ્રતિકારક શક્તિ બનાવે છે, બાળકને ગરમ રાખવામાં મદદ કરે છે અને માતા અને બાળક વચ્ચે બંધન વિકસાવવામાં મદદ કરે છે.
- માતાના દૂધ સિવાય અન્ય ખોરાક લેવાથી પોષક તત્વો નબળા રહેવાને કારણે ચેપ અને કુપોષણ થઈ શકે છે. બાળકને આવા ખોરાક પચાવવામાં મુશ્કેલી પડી શકે છે જેના પરિણામે ઝાડા અને ઊલટી થાય છે. સ્તનપાન બાળક ઇચ્છે તેટલી વાર અને બાળક ઇચ્છે તેટલા લાંબા સમય સુધી, દિવસ અને રાત દરમિયાન કરવું જોઈએ.

બોટલ ફીડિંગનો ગેરલાભ
• બોટલ-ફીડિંગ તમારા બાળકની રોગપ્રતિકારક શક્તિ સાથે સમાધાન કરી શકે છે. • તે માતા-બાળકના બંધનને અસર કરે છે. • ક્રોનિક રોગોનું જોખમ વધારે છે. • વધુ વજનવાળા બાળકો. • ચેપ અને કુપોષણથી મૃત્યુ થવાની સંભાવના વધુ છે. • ઝાડા અને અન્ય ચેપ તરફ દોરી જાય છે.

❖ ઉપરી આહાર:

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

ઉપરી આહાર માટે નીચે આપેલા મુદ્દાઓ ધ્યાન માં રાખવા:-

- બધા જ નાના બાળકો ને ૬ મહિના ની ઉંમર પછી ઉપરી આહાર ની જરૂરત પડે.
- બાળકો માં ૬-૧૧ મહિના નો સમય ખુબ જ જોખમી હોય કારણ કે આ સમયે બાળકો માં કુપોષણ સામાન્ય છે. બાળકો આ ઉંમર માં ઉપરી આહાર ખાતા શીખે છે અને પુરતો ખોરાક લેવા માટે સક્ષમ નથી હોતા.

- ૬ મહિના ની ઉંમર પછી બાળકો પ્રવાહી અને પોચો ખોરાક લેતાશીખે, બાળકો ના નવા દાત આવવા પણ શરુ થાય છે અને બાળકો ખોરાકનુ પાચન કરવા પણ સક્ષમ થાય છે.
- ૯ મહિનાની ઉંમર પછી બાળક અર્ધઘટ મસળેલો ખોરાક ખાવા માટે સક્ષમ થાય છે.
- ૧૫ મહિનાની ઉંમર પછી બાળક ઘર ના બીજા બધા સભ્યો ની જેમ કઠણ ખોરાક ખાવા શીખી જાય છે.

પૂરક ખોરાકની માત્રા અને આવૃત્તિ:

આપવા માટે ખોરાકની માત્રા			
ઉમર	ખોરાકના પ્રકારો	આવૃત્તિ	દરેક ભોજનમાં રકમ
6 મહિના	નરમ લાપસી, સારી રીતે મેશ કરેલું શાક, માંસના ફળો	દરરોજ 2-3 વખત ઉપરાંત વારંવાર સ્તનપાન	2-3 ટેબલ ચમચી
૭-૮ મહિનો	મસ્ડેલો ખોરાક	દરરોજ 3 વખત ઉપરાંત વારંવાર સ્તનપાન	250 મિલી કાટોરી/બાઉલમાંથી ધીરે ધીરે વધીને 2/3
9-11 મહિના	ઝીણા સમારેલા અથવા મેશ કરેલા ખોરાક, અને બાળક ઉપાડી શકે તેવા ખોરાક	ભોજન અને સ્તનપાન વચ્ચે 3 ભોજન ઉપરાંત 1 નાસ્તો	250 મિલી કાટોરી/બાઉલમાંથી 3/4
12-24 મહિના	જો જરૂરી હોય તો કુટુંબના ખોરાક, સમારેલા અથવા મેશ કરેલા	ભોજન ઉપરાંત સ્તનપાન વચ્ચે 3 ભોજન ઉપરાંત 2 નાસ્તો	સંપૂર્ણ 250 મિલી કાટોરી/બાઉલ અથવા તેથી વધુ

❖ આંગણવાડી માં થી મળતા બાલશક્તિ ના પેકેટ અંગે સમજ

બાલશક્તિઃ- બાલશક્તિ ૬ મહિનાથી ૩ વર્ષની વય-સામાન્ય અને ગંભીર રીતે ઓછા વજનવાળા બાળકો અને ૩-૬ વર્ષના ગંભીર રીતે ઓછા વજનવાળા બાળકોમાં બાળકોની પોષક સ્થિતિ સુધારવા માટે ખાસ તૈયાર કરવામાં આવી છે. બાલશક્તિના ૫૦૦ કિલો કેલરી ઊર્જાને મળતા ૫૦૦ ગ્રામના ૭ પેકેટ અને સામાન્ય વજનધરાવતા બાળકોને ૧૨-૧૫ ગ્રામ પ્રોટીન આપવામાં આવે છે અને ૮૦૦ કિલોકેલરી ઊર્જાને મળતા ૧૦પેકેટ અને ૬ મહિનાથી ૩ વર્ષની ઉંમરના ગંભીર રીતે ઓછા વજનવાળા બાળકોને ૨૦-૨૫ ગ્રામ પ્રોટીન આપવામાં આવે છે. જ્યારે ગંભીર રીતે ઓછા વજનવાળા બાળકોને દર મહિને ટેક હોમ રેશન (THR) જેવા 4 પેકેટ આપવામાં આવે છે.	

આટલું યાદ રાખો :

- **જીવન ના પ્રારંભિક ૧૦૦૦ દિવસ પર વિશેષ ધ્યાન આપવાથી કુટુંબની તંદુરસ્તી જાળવી શકાય જેથી બીમારીઓ/કુપોષણ પર થતા ખર્ચા બચાવી ને આવક અને બચત વધારી શકાય.**
- **જન્મના 1 કલાકની અંદર સ્તનપાનની શરૂઆત કરવી જોઈએ અને ૬ મહિના સુધી માત્ર સ્તનપાન જ કરાવવું જોઈએ.**
- **બાળકને ૬ મહિના થઈ જાય પછી તેને ઉપરી આહાર શરૂ કરાવો જોઈએ અને સાથે સાથે ૨ વર્ષ સુધી સ્તનપાન આપવું જોઈએ.**

કુપોષણ

❖ કુપોષણ શું છે?

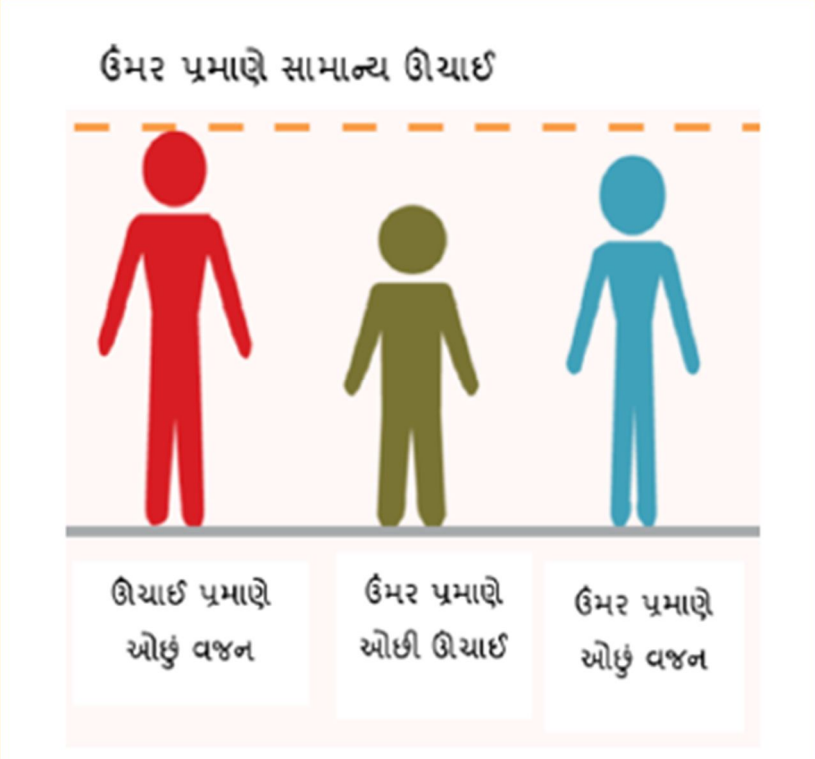
કુપોષણ એ ત્યારે થાય છે જ્યારે શરીરને તેના દૈનિક ઊર્જા અને આરોગ્ય માટે જરૂરી પોષક તત્વો પૂરતા પ્રમાણમાં મળતા નથી. આ ખોરાકની અપર્યાપ્ત સંખ્યાથી, આહારમાં પોષક તત્વોની ગુણવત્તા નીચી હોવાને કારણે અથવા પોષક તત્વોને યોગ્ય રીતે શોષણ ન કરી શકવાના કારણે થાય છે.

કુપોષણ શારીરિક અને માનસિક વિકાસ, રોગપ્રતિકારક શક્તિ અને સમગ્ર ઉત્પાદન ક્ષમતાને અસર કરે છે. તે ખાસ કરીને બાળકો, કિશોરીઓ, ગર્ભવતી સ્ત્રીઓ અને ધાવણ આપતી માતાઓ જેવા સંવેદનશીલ વર્ગમાં વધુ જોવા મળે છે.

❖ કુપોષણના પ્રકાર, કારણો અને પરિણામો

કુપોષણના પ્રકાર:

કુપોષણ	પ્રકાર	માપદંડ	કુપોષણ થવાના લક્ષણો	સમયગાળાની અસર	કુપોષણ થવાના કારણો
ઉંમર પ્રમાણે ઓછું વજન	ઉંમર પ્રમાણે ઓછી ઊંચાઇ	ઉંમર પ્રમાણે ઓછું વજન	ટૂંકા ગાળે	વારસાગત	પોષણ તત્વનું શોષણ ન થાય અથવા શરીરના જરૂરીયાતથી વધુ વપરાય છે
ઉંમર પ્રમાણે ઓછી ઊંચાઇ	ઊંચાઇ પ્રમાણે ઓછું વજન	ઉંમર પ્રમાણે ઓછી ઊંચાઇ	લંબા ગાળે	ગરિબી	મોટે ભાગે બિમારીઓ તેમજ પોષણ-આહારની ગુણવત્તા પર અસર
પાતળાપણું	ઊંચાઇ પ્રમાણે ઓછું વજન	ઉંમર પ્રમાણે ઓછી લંબાઇ અને વજન	ટૂંકા ગાળામાં થતો વજન ઘટાડો અથવા અતિવૃદ્ધિ થવાનું	વ્યક્તિના ઘટક ગુણવત્તા સાથે પોષણ સંકળાય છે	અસ્થાયી આહાર અને પાણીની ખોટ
					દવાઓ-ધૂમ્રપાન, બીમારીઓ તથા અન્ય કારણો



સૂક્ષ્મ પોષકતત્વોની ઉણપ એટલે વિટામિન્સ અને ખનિજતત્વો (વિટામિન A, D, E, K, વિટામિન B, લોહ, ફોલેટ અને અન્ય વિટામિન્સ અને ખનિજતત્વો) નું અભાવ, જે શરીરના વિવિધ કાર્ય જેમ કે એન્ટિબોડી, હોર્મોન્સ, અને વૃદ્ધિ તથા ત્વચા માટે જરૂરી છે. આ પોષણની ઉણપ સૌથી વધુ બાળકો, કિશોરો અને વધુ વયના લોકોને પ્રભાવિત કરતી એવી ગંભીર ભૂખમરીની સમસ્યાઓમાંથી એક છે.

કુપોષણના કારણો:

- અપર્યાપ્ત ખોરાક: ખોરાકની માત્રા અથવા ગુણવત્તાની ખામી.
- ગરીબી: પોષણયુક્ત ખોરાક સુધી પહોંચવાની આર્થિક મર્યાદા.
- હાઇજીન અને સ્વચ્છતાની ખોટ: ચેપની અસર વધે છે, જે પોષક તત્વોના શોષણને ઘટાડે છે.
- જાગૃતિનો અભાવ: સંતુલિત આહાર અને તંદુરસ્ત ખાવાની પ્રથાઓ વિશે અજ્ઞાનતા.
- રોગ અને બીમારીઓ: ડાયરિયા અને શ્વસન સંબંધિત ચેપ જેવી પુનરાવર્તિત બીમારીઓ પોષક તત્વોને ઘટાડે છે.

કુપોષણના પરિણામો:

- બાળકોમાં: શારીરિક વિકાસ અટકવો, બૌદ્ધિક વિકાસમાં અડચણ, સ્કૂલના પ્રદર્શનમાં ઘટાડો, અને ચેપ માટે વધતી સંવેદનશીલતા.
- મોટેરાંમાં: થાક, ઉત્પાદન ક્ષમતા ઓછી થવી, અને રોગપ્રતિકારક શક્તિ ઘટવી.
- ગર્ભવતી સ્ત્રીઓમાં: માતૃત્વ મૃત્યુદર વધે છે, જન્મ વખતે ઓછું વજન અને પ્રસૂતિ દરમિયાન જોખમ વધે છે.

❖ કુપોષણ માટે સૌથી વધુ જથ્થાબંધ કોણ છે?

કુપોષણના જોખમવાળા કેટલાક વિશેષ વર્ગ:

1. શિશુઓ અને નાનાં બાળકો (0-5 વર્ષ): ઝડપથી વૃદ્ધિ અને વિકાસ માટે પૂરતું પોષણ જરૂરી છે.
2. કિશોરીઓ: પોષક તત્વોની વધતી જરૂરિયાતો અને પેઢી માટે કુપોષણનું જોખમ ઘટાડવું.
3. ગર્ભવતી અને ધાવણ આપતી સ્ત્રીઓ: માતા અને બાળકના આરોગ્ય માટે વધારે પોષક તત્વોની જરૂર હોય છે.
4. વૃદ્ધ વયના લોકો: ખાવામાં અને પોષક તત્વોના શોષણમાં મક્કમતાને કારણે જોખમ.
5. આર્થિક રીતે નબળા સમુદાયો: ગુણવત્તાવાળા ખોરાક સુધી મર્યાદિત પહોંચ.

❖ કુપોષણને કેવી રીતે રોકવું?

1. સંતુલિત આહાર પ્રોત્સાહિત કરો:

- ધાન, દાળ, શાકભાજી, ફળો, દૂધ અને સ્વસ્થ ચરબીવાળા આહારમાં વિવિધ ખોરાકનો સમાવેશ કરો.
- પરિવારને આહારીય વિવિધતા અને સંતુલિત ભોજનના મહત્વ અંગે જાગૃત બનાવો.

2. સ્વચ્છતા અને હાઇજીન સુધારવા:

- સ્વચ્છ પીવાનું પાણી અને શૌચાલયની સુવિધા પૂરી પાડો.
- ચેપ અટકાવવા માટે હાથ ધોવાની અને સ્વચ્છતા પ્રથાઓ પ્રોત્સાહિત કરો.

3. માતા અને બાળકની સંભાળ:

- શિશુઓ માટે પ્રથમ 6 મહિને અનન્ય સ્તનપાન અને પછી પૂરક ખોરાક.
- અંગણવાડી કેન્દ્રોમાં બાળકના વિકાસની નિયમિત દેખરેખ રાખો.

4. સમુદાય જાગૃતિ મજબૂત બનાવવી:

- સમુદાય મીટિંગ્સ અને અભિયાનો દ્વારા પોષણ, આરોગ્ય અને હાઇજીન વિશે જાગૃતિ ફેલાવો.
- AWW, ASHA અને અન્ય આગળની પંક્તિના કાર્યકરોને કુપોષણની આગોતરી ઓળખ માટે તાલીમ આપો.

5. સરકારની યોજનાઓ સાથે લિંક કરો:

- ICDS, મિડ-ડે મીલ યોજના, પોષણ અભિયાન, અને PMMVY જેવી યોજનાઓનો ઉપયોગ કરી પોષક ખોરાક પૂરો પાડો.

6. પોષણ બાગનો પ્રોત્સાહન આપો:

- વર્ષભર તાજા અને પોષણયુક્ત ખોરાક માટે કિચન ગાર્ડન અથવા પોષણ બાગને પ્રોત્સાહન આપો.

માતા અને બાળકો માટે સરકારી કાર્યક્રમો ની સેવાઓ

લાભાર્થીઓ	સેવાઓ	ક્યાંથી આ સેવાઓ મેળવી શકાય છે?
આઇસીડીએસ (ICDS)		
કિશોરવયની છોકરીઓ	ગ્રોથ મોનિટરિંગ (વજન, ઊંચાઈ)	આંગણવાડી
	પૂરક પોષણ /THR (પુતનાશક્તિ પેકેટ્સ- 1 કિલો ના 4 પેકેટ)	આંગણવાડી
	આયર્ન ફોલિક એસિડ ગોળી (અઠવાડિયા માં 1 વાર)	આંગણવાડી / સબસેન્ટર/ શાળા
	કૃમિનાશક ગોળી (વર્ષમાં ૨ વાર- ગુજરાતમાં, તે ફેબ્રુઆરી અને ઓગસ્ટમાં કરવામાં આવે છે)	આંગણવાડી / સબસેન્ટર / શાળા
	ટિટનસ રસી (10 અને 14 વર્ષ)	આંગણવાડી / સબસેન્ટર
	દવાઓ-મુખ્યત્વે ઉધરસ, શરદી, તાવ, ઝાડા અને ઉલ્ટી ગંભીર કિસ્સાઓમાં, તેઓને મોકલવામાં આવે છે	આંગણવાડી / સબસેન્ટર દવાખાના
	પોષણ આરોગ્ય શિક્ષણ -પૂર્ણા દિવસ (મહિનાનો ચોથો મંગળવાર) પર આહાર, IFA, કૃમિનાશક, WASH પ્રેક્ટિસ, ખરાબ સ્પર્શ સારો સ્પર્શ, THR, માસિક ધર્મ, કુટુંબ નિયોજન, બેંક, પોસ્ટ ઓફિસ, 108, 181 જેવી સાર્વજનિક સુવિધાઓની ઍક્સેસ , 100, અગ્નિશામક, વગેરે અને વ્યાવસાયિક તાલીમ અંગે પરામર્શ કરવામાં આવે છે	આંગણવાડી
સગર્ભાઓ	12 અઠવાડિયાની અંદર પ્રારંભિક નોંધણી	આંગણવાડી
	ગ્રોથ મોનિટરિંગ (વજન, ઊંચાઈ)	આંગણવાડી
	પૂરક પોષણ /THR (માતૃશક્તિ પેકેટ્સ- 1 કિલો ના 4 પેકેટ)	આંગણવાડી
	ફોલિક એસિડ ગોળી (ત્રીજા મહિના સુધી) આયર્ન ફોલિક એસિડ ગોળી (ચોથા મહિનાથી), } દિવસમાં 1 વાર	આંગણવાડી / સબસેન્ટર
	કેલ્શિયમ ગોળી (દિવસમાં 2 વાર)	આંગણવાડી / સબસેન્ટર

	કૃમિનાશક ગોળી (વર્ષમાં ૨ વાર- ગુજરાતમાં, તે ફેબ્રુઆરી અને ઓગસ્ટમાં કરવામાં આવે છે)	આંગણવાડી / સબસેન્ટર
	ટિટનસ રસી (2 ડોઝ)	આંગણવાડી / સબસેન્ટર
	દવાઓ-મુખ્યત્વે ઉધરસ, શરદી, તાવ, ઝાડા અને ઉલ્ટી ગંભીર કિસ્સાઓમાં, તેઓને મોકલવામાં આવે છે	આંગણવાડી / સબસેન્ટર પીએચસી / દવાખાના
	પોષણ આરોગ્ય શિક્ષણ- મમતા દિવસ (દર બુધવારે) અને સુપોષણ સંવાદ (મહિનાનો 1 મંગળવાર), આહાર, રસીકરણ, આરોગ્ય તપાસ વગેરે વિશે પરામર્શ કરવામાં આવે છે	આંગણવાડી
	બ્લડ ટેસ્ટ, બીપી, ડાયાબિટીસ	સબસેન્ટર / પીએચસી
ધાત્રી માતાઓ	ગ્રોથ મોનિટરિંગ (વજન, ઊંચાઈ)	આંગણવાડી
	પૂરક પોષણ /THR (માતૃશક્તિ પેકેટ્સ- 1 કિલો ના 4 પેકેટ- બાળક 6 મહિનાનું થાય ત્યાં સુધી)	આંગણવાડી
	આયર્ન ફોલિક એસિડ ગોળી (સુવાવડથી બાળક 6 મહિનાનું થાય ત્યાં સુધી)	આંગણવાડી / સબસેન્ટર
	કેલ્શિયમ ગોળી	આંગણવાડી / સબસેન્ટર
	કૃમિનાશક ગોળી (વર્ષમાં ૨ વાર- ગુજરાતમાં, તે ફેબ્રુઆરી અને ઓગસ્ટમાં કરવામાં આવે છે)	આંગણવાડી / સબસેન્ટર
	દવાઓ-મુખ્યત્વે ઉધરસ, શરદી, તાવ, ઝાડા અને ઉલ્ટી ગંભીર કિસ્સાઓમાં, તેઓને મોકલવામાં આવે છે	આંગણવાડી / સબસેન્ટર પીએચસી/ દવાખાના

બાળકો (0-6 વર્ષ)	ગ્રોથ મોનિટરિંગ (વજન, ઊંચાઈ)- (બાલતુલા દિવસ - મહિનાનો બીજો મંગળવાર)	આંગણવાડી
	પૂરક પોષણ/THR (બાલશક્તિ પેકેટ્સ) **a) 6-36 મહિના** - 500 ગ્રામ ના 7 પેકેટ **b) 3-6 વર્ષ** -1 નાસ્તા અને 1 ગરમ રાંધેલું ભોજન -જો SAM બાળક, બાલશક્તિના 3 પેકેટ આપવામાં આવે છે	આંગણવાડી
	વિટામિન-એ સિરપ -1 ડોઝ (9 મહિનામાં) 2 ડોઝ (12 મહિનામાં)	આંગણવાડી / સબસેન્ટર
	આયર્ન ફોલિક એસિડ ગોળી (અઠવાડિયા માં 2 વાર)	આંગણવાડી / સબસેન્ટર
	કૃમિનાશક ગોળી (વર્ષમાં ૨ વાર- ગુજરાતમાં, તે ફેબ્રુઆરી અને ઓગસ્ટમાં કરવામાં આવે છે)	આંગણવાડી / સબસેન્ટર
	રસીકરણ	આંગણવાડી
	બિન-ઔપચારિક પૂર્વ-શાળા શિક્ષણ (3-6 વર્ષ) - રમત-ગમત પદ્ધતિ	આંગણવાડી
	દવાઓ-મુખ્યત્વે ઉધરસ, શરદી, તાવ, ઝાડા અને ઉલ્ટી ગંભીર કિસ્સાઓમાં, તેઓને મોકલવામાં આવે છે	આંગણવાડી / સબસેન્ટર પીએચસી/ દવાખાના
	અન્નપ્રાશન દિવસ (મહિનાનો ત્રીજો મંગળવાર)- છઠો મહિનો પૂરો થયા પછી બાળકને પ્રથમ ખોરાક આપવામાં આવે	આંગણવાડી
પ્રજનનક્ષમ વયની સ્ત્રીઓ (15-49 વર્ષ)	આયર્ન ફોલિક એસિડ ગોળી (અઠવાડિયા માં 1 વાર)	આંગણવાડી / સબસેન્ટર
	દવાઓ-મુખ્યત્વે ઉધરસ, શરદી, તાવ, ઝાડા અને ઉલ્ટી ગંભીર કિસ્સાઓમાં, તેઓને મોકલવામાં આવે છે	આંગણવાડી / સબસેન્ટર પીએચસી / દવાખાના

	આહારની આદતો અને આહારમાં વૈવિધ્યકરણ, IFA, કેલ્શિયમ, ફેમિલી પ્લાનિંગ વગેરે અંગે કાઉન્સેલિંગ સત્રો	આંગણવાડી
પીડીએસ (PDS)		
રેશન કાર્ડ- BPL	ફોર્ટિફાઇડ ચોખા ફોર્ટિફાઇડ ઘઉં/બાજરી/જુવાર દાળ/ચણા તેલ ખાંડ ફોર્ટિફાઇડ મીઠું	પીડીએસ- રાશનની દુકાન
રેશન કાર્ડ - APL	ફોર્ટિફાઇડ ચોખા ફોર્ટિફાઇડ ઘઉં/બાજરી/જુવાર દાળ/ચણા ફોર્ટિફાઇડ મીઠું	પીડીએસ- રાશનની દુકાન
જે લોકોની વાર્ષિક આવક <15000 રૂપિયા (BPL)	અંત્યોદય અન્ન યોજના (AAY) -35 કિલો અનાજ આપવામાં આવે છે.	રાશનની દુકાન
પીએમ-પોષણ (PM-POSHAN)		
1-8 ધો. વિદ્યાર્થીઓ	અક્ષય પાત્રા દ્વારા વિદ્યાર્થીઓ માટે શાળામાં રાંધેલું ભોજન આપવામાં આવે છે જેમાં નાસ્તા અને સંપૂર્ણ ભોજનનો સમાવેશ થાય છે	સરકારી દવાખાનું
આયુષ્માન ભારત-પીએમ જય (Ayushman Bharat- PM JAY)		
વરિષ્ઠ નાગરિકો જેમની પાસે આયુષ્માન કાર્ડ હોય	તેમને ભારતની જાહેર અને ખાનગી પેનલવાળી હોસ્પિટલોમાં ગૌણ અને તૃતીય સંભાળ હોસ્પિટલમાં દાખલ થવા માટે કુટુંબ દીઠ રૂ. 5 લાખ પ્રતિ વર્ષનું કવર મળે છે.	પીએચસી/ દવાખાના

ગ્રામ આરોગ્ય સ્વચ્છતા અને પોષણ સમિતિ (VHSND) (ગ્રામ સંજીવની) ના દિવસે પૂરી પાડવામાં આવતી સેવાઓની સૂચિ અને લક્ષ્ય જૂથો નીચે આપેલા કોષ્ટકમાં આપેલ છે:

લક્ષ્ય જૂથ	VHSND સેવાઓનો પ્રકાર
	આરોગ્ય સેવાઓ
સગર્ભાઓ, ધાત્રી માતાઓ, બાળકો (0-5 વર્ષ, 10 વર્ષ અને 16 વર્ષ), કિશોરો, પ્રજનન વય જૂથની સ્ત્રીઓ	• પ્રસૂતિ પહેલાની સંભાળ- સગર્ભાવસ્થા નોંધણી, તપાસ, સૂક્ષ્મ પોષકતત્વો પૂરક, કાઉન્સેલિંગ વગેરે. • પ્રસૂતિ પછીની સંભાળ- સૂક્ષ્મ પોષકતત્વો પૂરક અને પોષણ પરામર્શ • રસીકરણ - બધા બાળકો અને સગર્ભા માતાઓ માટે • કુટુંબ આયોજન- ગર્ભનિરોધક અને પરામર્શનું વિતરણ • પ્રજનન તંતના ચેપ- સ્ક્રીનિંગ, કાઉન્સેલિંગ અને રેફરલ • કિશોર આરોગ્ય- એનિમિયા માટે સ્ક્રીનીંગ અને BMI ટ્રેકિંગ, ક્લિનિકલ સમસ્યાઓની ઓળખ, સેનિટરી નેપકિનનું વિતરણ, શાળા બહારના કિશોરો માટે IFA સપ્લીમેન્ટેશન અને રેફરલ
તમામ વય જૂથો	• ચેપી રોગો- ટ્યુબરક્યુલોસિસ (ટીબી) ના ચિહ્નો અને લક્ષણો ઓળખો • બિન-ચેપી રોગો- સ્ક્રીનીંગ, કાઉન્સેલિંગ અને રેફરલ
પ્રજનન વય જૂથની સ્ત્રીઓ, તેમના પતિ અને સાસુ	• લિંગ મુદ્દાઓ- ઘરેલું હિંસા અને બાળક/ બાળકી અંગેની જન્મ પહેલા તપાસ
	પોષણ સેવાઓ
પ્રજનન વય જૂથની મહિલાઓ, પરિવારના સભ્યો, 5 વર્ષથી ઓછી ઉંમરના બાળકો, શાળા વયના બાળકો, કિશોરો, સગર્ભા અને ધાત્રી માતાઓ	• પોષણ ange જાગૃતિ • વૃદ્ધિ મોનીટરીંગ • એનિમિયા નિવારણ અને વ્યવસ્થાપન • વિટામિન A ના ડોઝ • પૂરક પોષણ (THR) • પોષણ પરામર્શ
	સ્વચ્છતા ને લાગતી સેવાઓ
પ્રજનન વય જૂથની સ્ત્રીઓ, કુટુંબના સભ્યો	• શૌચાલય બનાવવા માટે આર્થિક સહયોગ • સલામત પીવાનું પાણી અને હાથની સ્વચ્છતા • સ્વચ્છતા અભિયાન – ઘર અને આજુબાજુને સ્વચ્છ રાખવું • નિર્મલ ગ્રામ પુરસ્કાર

તમારું ગામ "પોષણ-સ્માર્ટ" બનાવવા માટે નુ આયોજન

Sr. no.	સંસ્થા/ સંસ્થાના પ્રતિનિધિ	પ્રવૃત્તિ
1	આંગણવાડી કાર્યકર	રેલીઓનું આયોજન
		વાનગી હરીફાઈ
		પૂર્ણ દિવસ પર કિશોરી ની કાઉન્સેલિંગ
2	વિદ્યાલય/ શાળા	રેલીઓ
		ન્યુટ્રી કોર્નર
		શિક્ષક દ્વારા પોષણ પરામર્શ
3	ગ્રામસભા	પોષણ પર ગ્રામ સભાની બેઠક
4	ASHA	આરોગ્ય તપાસ શિબિર
5	VO/ ગામ પ્રતિનિધિ/ વિલેજ રીપ્રેઝન્ટેટિવ	સ્વસહાય જૂથ સાથે કાઉન્સેલિંગ
6	ગ્રામ સંજીવની	દિવાલ પેઇન્ટિંગ
7	કિસાન મંડળી, દૂધ મંડળી, પાણી સમિતિ	પોષણ સ્માર્ટ ગામને પ્રોત્સાહન આપવા બેઠક
8	રાષ્ટ્રીય કિશોર સ્વસ્થ કાર્યક્રમ પિયર એડ્યુકેટર	રેલીઓ

APPENDIX VI

Handout

પોષણ સ્માર્ટ ગામ બનાવા માટે ની માર્ગદર્શિકા

તકનિકી નિષ્ણાંત - ડૉ. હેમાંગીની ગાંધી (આસિસ્ટન્ટ પ્રોફેસર)

સંશોધન વિદ્યાર્થી - તન્વી કોટડિયા (Sr. M.Sc. PHN)

ડિપાર્ટમેન્ટ ઓફ ફુડ એન્ડ ન્યુટ્રીશન, ફેકલ્ટી ઓફ ફેમિલી એન્ડ કમ્યુનિટી સાયન્સ
મહારાજા સયાજીરાવ યુનિવર્સિટી ઓફ બરોડા, વડોદરા

Handouts topic given below

અનુક્રમણિકા

Appendix VII

Paper presentation Paper 1

Health Complications in People Having Faulty Dietary Practices in Young Working Adults

*Gandhi Hemangini and **Tanvi Kotadia
Department of Foods and Nutrition
Faculty of Family and Community Sciences
The Maharaja Sayajirao University of Baroda
Theme – Track 1 health complication

Abstract
According to the NFHS-5 fact sheet, 57% of women in India are anemic, and nearly one-third of both men and women suffer from chronic energy deficiency (BMI <18.5). Conversely, 22–24% of adults are overweight or obese. Additionally, approximately 15% of men and women have high blood sugar levels, and nearly 20% of the adult population is affected by hypertension. This coexistence of undernutrition, overnutrition, and the rising prevalence of non-communicable diseases (NCDs) poses a significant health challenge, particularly among young working adults. Nutrition plays a crucial role in maintaining overall health and well-being, making it a key area of focus for public health interventions.
Young people (ages 10–24) in India form a rapidly growing and developing demographic. However, this stage of life is also marked by vulnerabilities arising from various internal and external factors affecting their health and safety. Estimates suggest that 10–30% of youth engage in behaviors or face conditions that negatively impact their well-being, necessitating immediate attention from public health professionals and policymakers. Key concerns for this age group include undernutrition, obesity, risky sexual behavior, alcohol and drug abuse, tobacco use, stress, mental health disorders, and injuries (such as road accidents, suicides, and violent crimes). The coexistence of multiple risk factors further elevates the likelihood of adverse health outcomes.
Among young working adults, poor dietary diversity and excessive consumption of ultra-processed and junk food are significant concerns. Irregular meal patterns, sedentary lifestyles, and work-related stress further contribute to nutritional imbalances. In addition, the lack of accessible and reliable nutrition education remains a challenge, exacerbated by the spread of misinformation and pseudoscience in the Indian food market. Addressing these challenges requires a collaborative effort from nutrition researchers, healthcare practitioners, and policymakers to ensure the dissemination of accurate and relevant nutrition information.
The presence of multiple risk factors contributes to the early onset of neurological illnesses, mental health issues, and NCDs, leading to significant morbidity, disability, mortality, and financial burdens. While several health policies and programs have addressed individual health concerns, a well-integrated and coordinated approach is still lacking. To effectively combat the growing burden of NCDs and injuries among young working adults, India must prioritize comprehensive, population-based research and implement health promotion initiatives that encourage sustainable healthy lifestyles.

Keywords- Dual burden, non-communicable disease, health *Faculty memberResearch student**

ST.TERESA'S COLLEGE (Autonomous)
(Affliated to Mahatma Gandhi University)
Re-Accredited by NAAC with A ++ Grade in the fourth cycle
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Presentation Certificate

14 th Edition of ReAP
"The Science of Living Well : Latest Research and Trends in Lifestyle Management"

We hereby certify that the paper titled
'Minimum Acceptable Diet of children 6 to 23 months of tribal children of Dungarpur district, Rajasthan'
was presented by
Tanvi Kotadia
as
Oral Presentation
Co-authors :- Devilal Vyas, Navin Rawal
In Research Advancement Programme (ReAP-2024) organized by Department of Home Science and Centre for Research on 4th October, 2024.

Dr. Alphonsa Vijaya Joseph, Principal
Ms.Teresa Kuncheria, Head of the Department
Dr.Rashmi H Poojara, Convenor
Ms.Ansu Tom, Co-convenor

Paper 2

Minimum Acceptable Diet of children 6 to 23 months of tribal children of Dungarpur district, Rajasthan

Devilal Vyas*, Navin Rawal**, Tanvi Kotadia***
Email- jsvsnavinmadhuvan@gmail.com tanvikotadia71@gmail.com

Abstract

Introduction: Undernutrition among young children is a cause of concern across the country. Tribal and rural children are more vulnerable and are at risk of developing consequences of malnutrition. Inadequate dietary intake, poor meal frequency and poor dietary diversity are the common factors affecting nutritional status of young children.

Objectives: The present study was planned to assess dietary practices and quality of diet consumed by children 6 to 23 months.

Methodology: 17 Anganwadi from tribal Dungarpur district were purposively selected and 100 children (6-23 months) were enrolled for the study. Background information and dietary practices was collected using pre tested semi structured questionnaire. 1 day 24-hour dietary recall was carried out to understand consumption of various food item and its frequency. To assess minimum acceptable diet, 7 food groups as per FANTA USAID (2016) was used.

Findings: Fifty two percent of children were male. All children were of second birth order. Seventy eight percent were ST, and 58% were APL. 8% of the children had Minimum dietary diversity that is consumption of 4 or more food groups out of 7 food groups. Adequate meal frequency was found in 16% children. Only 3% children had minimum acceptable diet having adequate frequency and dietary diversity.

Conclusion: There is need to create awareness among mothers of young children for complementary feeding practices. Community based events and village health and nutrition day should be used for counselling mothers for better diet quality for children and thereby preventing undernutrition in young children

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Key words – complementary feeding, dietary diversity and meal frequency *Director of NGO **NGO Project Manager ***Research Student

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INTERNATIONAL CONFERENCE ON
OCCUPATIONAL HEALTH AND SAFETY MEASURES-2025

DEPARTMENT OF HOME SCIENCE
CERTIFICATE

This is to certify that Dr/ Mr./Ms./ Mrs. Tanvi Kotadia, Dept of Food and Nutrition
The Maharaja Sayajirao university of Baroda has participated as Resource person/ Delegate / Paper Presenter / Rapporteur. The title of the paper Health Complications in People having Faulty Dietary Practises in Young Working Adults in the International Conference organized by the Department of Home Science, Gandhigram Rural Institute Deemed To Be University, Gsandhigram on 20 th and 21st March 2025.

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Appendix VIII

Photo Gallery

Interview with mothers of children (6- 24 months) and eliciting knowledge and practices of quantity consumption of CF (using standar d cups and spoon)

One day training of representatives of village institution

Execution of various activities according to action plan

Rally by Anganwadi workers and adolescent girls

Counselling of mothers and adolescent girls on nutrition and health by Anganwadi workers

Counselling of upper primary school children in school by teachers and Nutrition corner created in the school

Rally by school teachers and students

Nutrition corner

Gram sanjeevni meeting on nutrition and health

Health camp organized by PHC