Endline Assessment of the Millet Bar Intervention

Contents

List of Tables

List of Figures

Acronyms

AWC	Anganwadi Centers
HCM	Hot Cooked Meals
THR	Take-Home Rations
DID	Difference-in-Difference
IB	Intervention Block
CB	Control Block
GTBLLP	Grant Thornton Bharat LLP
SAM	Severe Acute Malnutrition
MAM	Moderate Acute Malnutrition
KII	Key Informant Interviews
FGD	Focus Group Interviews
MUAC	Mid Upper Arm Circumference
CAPI	Computer Assisted Personal Interviewing
SOP	Standard Operating Procedure
AWW	Anganwadi Worker
LS	Lady Supervisor
CDPO	Chid Development Program Officer
DPO	District Program Officer

Abstract

This paper examines the implementation and potential impact of the Millet Bar Programme initiated by the Anil Agarwal Foundation in Varanasi district, Uttar Pradesh, India, as a response to the critical challenge of malnutrition among children aged 3 to 6 years. With malnutrition significantly contributing to India's disease burden and child mortality, and the recent exacerbation due to the global pandemic, innovative nutritional interventions have become imperative. The government's commitment to address malnutrition through Anganwadi Centres (AWCs) highlights the need for sustainable, nutritious feeding programs. The program centers on distributing a millet-based nutritional bar to around 48,000 young children across 1,364 Anganwadi centers within the Kashi Vidyapeeth, Arajiline, and Sewapuri regions of Varanasi. Each child receives six bars weekly over a six-month pilot phase. The primary goal behind the intervention was to combat undernutrition and foster early childhood development. A baseline assessment conducted at the outset covered 380 children, employing quantitative methods to collect data on demographic characteristics, socio-economic status, food security, dietary diversity, and children's nutritional status, including BMI indices. The endline study, supported by GTB LLP and AAF, covering 300 children, explored the programme's outcomes, focusing on nutrition indicators, health, attendance, and socio-economic impacts. The Millet Bar Programme in Varanasi demonstrated a positive impact on the height of children aged 3 to 6, as revealed through a Difference in Differences analysis. The study found that over time, children's height significantly increased, particularly in the context of government-provided nutritional support. Although weight gains were less pronounced, there was a general upward trend. These results underline the benefits of such nutritional programs in conjunction with government efforts, contributing to the overall growth and development of children in the targeted age group. This research contributes to understanding the effectiveness of millet-based nutritional interventions in combating childhood malnutrition and guiding future policies and programs.

Summary

Increased Attendance

The programme was successful in increasing attendance of children going to Anganwadi Centers in the intervention blocks.
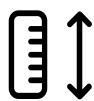
Increase in Height

Findings suggest that the millet bar intervention facilitated notable height growth in children in the intervention blocks.

Extensive Commendation

Parental feedback predominantly favored the program, indicating broad acceptance and agreement with its objectives and implementation.

Infrastructure Aids Growth

Significant correlations between improved water and sanitation facilities and children's height suggest the programme's indirect benefits are augmented by better environmental conditions.

Government Scheme Synergy

The programme effectively complemented existing government nutritional schemes, enhancing the overall dietary diversity and nutritional intake of participating children.

1.Introduction

1.1 Background

Malnutrition remains a critical challenge in India, deeply impacting the nation's overall health outcomes. The multifaceted problem encompasses a spectrum of nutritional deficiencies, including undernutrition, insufficient intake of vitamins and minerals, leading to various diet related diseases. This issue places a considerable strain on India's healthcare system, affecting millions of peoples by impairing cognitive development, lowering immunity, and increasing susceptibility to disease and health.

The coronavirus pandemic magnified challenges with malnutrition to a degree that disrupted food supply chains, economic stability, and household incomes. This disruption made it burdensome for vulnerable populations to access nutritious foods, escalating the risk of food insecurity and exacerbating existing malnutrition issues. Consequently, the last few years saw temporary closure of educational and childcare facilities which deprived many children of this critical age bracket of key nutritional support, missing out on essential nutrients crucial for their growth and development during key formative years.

Malnutrition in this age group encompasses a broad spectrum of issues, from undernutrition, which manifests as stunting, wasting, and being underweight, to deficiencies in essential vitamins and minerals. This period is crucial for cognitive development, immune system maturation, and overall physical growth, making the consequences of malnutrition during these years especially dire. The repercussions in early childhood are profound, affecting not only physical growth and susceptibility to infections but also cognitive abilities and educational achievement.

This can lead to diminished productivity in adulthood, perpetuating a cycle of poverty and malnutrition that can span generations. The strain on the healthcare system is also significant, with preventable nutrition-related conditions placing an additional burden on already stretched resources.

1.2 Nutritional Landscape in Uttar Pradesh

The nutritional landscape in Uttar Pradesh, one of India's most populous states, presents a complex and challenging scenario, reflecting broader issues of malnutrition that are prevalent across rural and urban divides. This region, marked by significant socio-economic disparities, exhibits high rates of malnutrition among children, particularly those between the ages of 3 and 6 years.

Undernutrition remains a pervasive problem, with stunting (low height for age), wasting (low weight for height), and underweight children being widespread indicators of chronic and acute malnutrition. These conditions are often the result of insufficient intake of nutritious food, poor dietary diversity, and high rates of infectious

diseases, compounded by inadequate access to healthcare services. Uttar Pradesh's high malnutrition rates are not merely a health concern but a critical barrier to the state's socio-economic development, impacting educational outcomes, workforce productivity, and perpetuating cycles of poverty. Over the past five years, the nutritional landscape in Uttar Pradesh has been closely scrutinized, revealing that there is a persistent issue of undernutrition among children under 5 years, with notable trends observed from 2005-2006 and 2019-2021 (NFHS Data). Stunting and anemia represent significant burdens, with districts such as Sitapur and Moradabad recording high numbers of stunted children. Uttar Pradesh has identified public health concerns related to stunting and anemia in 75 districts, alongside alarming rates of wasting and severe wasting in children under 5. Out of 72 districts, there is a recognized public health concern regarding wasting. The coverage of nutrition interventions across the state indicates variability and highlights areas needing enhancement, as identified through the POSHAN Abhiyaan monitoring framework.

1.3 Project Objective

The project's objective is to combat malnutrition among children aged 3 to 6 years in Uttar Pradesh by integrating millet-based nutritional bars into their diets. These millet bars, designed as a sustainable and nutritious intervention, are produced in compliance with international food safety standards, offering a rich blend of essential nutrients such as protein, fiber, calcium, and iron. Distributed through Anganwadi Centres across selected districts, the initiative aims to improve nutritional intake, enhance health outcomes, and promote dietary diversity among the target population.

1.4 Report Objective

The primary objective of this report is to assess the effectiveness and impact of the Millet Bar Programme implemented by the Anil Agarwal Foundation in Varanasi district, Uttar Pradesh. This intervention aims to provide supplementary nutrition to children aged 3 to 6 years through the distribution of nutrient-rich, millet-based bars at selected Anganwadi Centres. The report seeks to evaluate the program's success in improving nutritional status, enhancing dietary diversity, and increasing enrolment and attendance at Anganwadi Centres. Additionally, it aims to analyze the sustainability and scalability of millet-based nutrition interventions in addressing childhood malnutrition and fostering long-term health benefits.

1.5 The Millet Bar Pilot Intervention

In line with these initiatives, the Anil Agarwal Foundation has started the implementation of a focused nutrition intervention – the Millet Bar Programme. This program is designed to provide supplementary nutrition through a millet-based ready-

to-eat bar to all enrolled children aged 3 to 6 years at AWCs **in three specific blocks of Varanasi district, viz., Kashi Vidyapeeth, Arajiline, and Sewapuri**.

The key programme specifications are as follows:
a) **Product**: A nutrient-rich, millet-based bar.
b) **Beneficiaries**: Approximately 48,000 children aged 3 to 6 years enrolled in 1,364 Anganwadi centres.
c) **Target Geography**: Kashi Vidyapeeth, Arajiline, and Sewapuri blocks of Varanasi District.
d) **Distribution Frequency**: 6 units per child per week.
e) **Duration**: A pilot period of 26 weeks (~6 months)
f) **Certification and Compliance**: Ensuring that the millet bars meet ISO 9001:2015 and FSSC 22000 V5.1 food safety standards.

To ensure the quality and effectiveness of the millet bars, the Anil Agarwal Foundation partnered with TrooGood Nutrition who has a past track record of supplying nutritious Millet Chikkis to numerous schools and Anganwadi centres across India. The millet bar distributed in AWCs is a 20-gram serving, rich in essential nutrients like protein, fiber, calcium, and iron, and is free from artificial preservatives, ingredients, processed sugar, gluten, colors, or flavors. These bars are not only nutritionally beneficial but also appealing to children, potentially aiding in increased enrolment and attendance at Anganwadi centres.

1.5.1 Our Understanding of the Millet Bar Programme

The Millet Bar Programme aims to bridge the nutritional gap among children, particularly focusing on protein, iron, fibers, and other basic nutrients. By leveraging the popularity of millets during the International Year of Millets, the program also seeks to underscore the importance of these grains in a balanced diet. The 20g Millet Bar is expected to provide approximately 100Kcal of energy and 3.5g of protein, making it a substantial addition to the children's daily nutritional intake.

Our understanding of the key focus areas of the programmatic intervention

Nutritional Enhancement in Early Childhood

- **Objective:** To significantly improve the nutritional intake of children aged 3 to 6 years in the targeted Anganwadi Centres.
- **Focus Nutrients:** Protein, iron, dietary fibers, and essential micronutrients, which are crucial for the holistic development of children in their early years.

Bridging Nutritional Gaps

- **Addressing Deficiencies:** Targeting common nutritional deficiencies in the child population, particularly in underprivileged areas.
- **Impact on Health:** Aiming to reduce the incidence of malnutrition-related health issues such as anemia, growth stunting, and cognitive delays..

Promoting Millets as a Superfood

- **Awareness Campaign:** Utilizing 2023, the International Year of Millets, to educate communities about the health benefits of millets.
- **Cultural Relevance:** Reintroducing millets, a traditional grain, into the modern diet, emphasizing its cultural and historical significance in India.

Enhancing Anganwadi Services

- **Supplementing Meals:** Complementing the existing hot-cooked meal programs in Anganwadis with nutrient-rich millet bars.
- **Boosting Attendance and Enrollment:** Using the appeal of the tasty, nutritious bars to encourage regular attendance and increase enrolment at Anganwadi Centres.

Addressing Diverse Nutritional Needs

- **Inclusivity in Nutrition:** Suitable for all categories of children, including those who are healthy as well as those with Specialized Nutrition Assistance Programs (SAM and MAM).
- **Year-Round Consumption:** Designed to be consumed throughout the year, adaptable to different seasonal needs.

Using the pilot as a model for potential replication and scaling in other regions.

Fig. 1: Key Focus Areas of Programmatic Intervention

1.6 Baseline Assessment

A baseline assessment was commissioned by AAF during the launch and early stages of the program. The baseline assessment was conducted with an objective to collect as-is data to scientifically track additional benefits accruing to children. The baseline information for a target population of **three hundred and eighty children** was collected through quantitative data collection done.

a) **Survey:** A structured questionnaire was provided to field surveyors to collect information about the household's demographic characteristics, socio-economic status, food security, and dietary diversity.

b) **BMI index of children**: Children's body-mass index such as weight, height, and mid-upper arm circumference were measured to assess their nutritional status.

1.7 Overview of the Baseline Assessment Exercise

As part of our approach for conducting the endline assessment of the Millet Bar program, we have undertaken a preliminary analysis of the existing baseline assessment data. This analysis is pivotal in understanding the initial conditions, setting benchmarks, and any potential data gaps against which the endline results can be compared.

The Millet Bar program, aimed at improving the nutritional status of children, was implemented with a distinct separation of participants into two groups:

a) **Treatment Group**: This group comprises children who were provided with Nutri-Bars as a nutritional intervention. The composition of this group is carefully balanced with regards to gender, including **93 boys and 91 girls, representing a significant portion of the male (51.09%) and female (45.96%) populations under study**. The introduction of Nutri-Bars to their diet is the key variable that differentiates this group, intended to enhance their nutritional intake and overall health of the children at the AWCs.

b) **Control Group**: **196 children (89 boys and 107 girls)** who are part of this group, did not receive the Nutri-Bars. Serving as a comparative benchmark, the control group is essential for evaluating the effectiveness of the Nutri Bar intervention. By comparing the growth and health indicators of the control group with those of the treatment group, we can assess the linkages of the Nutri Bars intake to the various parameters linked to children's nutrition at the AWCs.

In the following section, we present key insights derived from the baseline data, focusing specifically on the nutritional impact of the Millet Bar program. These insights will guide our approach during the endline assessment, ensuring a focused and effective measurement of the program's outputs and outcomes.

1.8 Key Findings from the Baseline Assessment

Based on our preliminary analysis, some of the key findings at this stage are as follows:

a) **Enhanced Growth Indicators in Treatment Group** The treatment group, at baseline, had a higher average height of children than that of control group. The endline assessment shall focus on tracking height changes, over the course of the Nutri-Bar programme. As a part of the proposed analysis, comparing these trends between the treatment and control groups may help ascertain if the height increase is attributable to the 'Millet Bar' intervention.

b) **Balanced Weight Management**: Both groups displayed similar average weight, the endline assessment will investigate the changes over time and assess any potential correlation with the nutritional content of Millet Bars. This can help determine if Millet Bars contribute to a healthy growth pattern without leading to underweight or overweight issues for children studying at AWCs.

c) **Gender-Specific Nutritional Benefits**: The baseline data indicates similar status across genders in the treatment group. The proposed endline assessment can further explore this by monitoring **gender-specific growth patterns and nutritional status changes**, providing a finer understanding of how Millet Bars may serve differently for boys and girls differently, if at all.

d) **Low Absenteeism in Treatment Group**: Our preliminary analysis indicates that **high attendance rates in the treatment group may be a critical factor for consistent Millet Bar intake** and, consequently, its potential nutritional benefits. During the proposed endline assessment, tracking attendance and correlating it with health improvements over the timeline of the Nutri Bar programme shall be essential to understand if **regular Millet Bar consumption is linked to nutritional benefits.**

e) **Economic and Nutritional Correlation**: Given the economic backgrounds of the households covered during the baseline assessment exercise, the endline assessment may also seek to examine if **continued Millet Bar supplementation has a more pronounced impact on children from lower-income families**. This shall involve assessing if Millet Bars bridge nutritional gaps that might exist due to economic constraints.

f) **Socio-economic Impact on Nutritional Choices**: The baseline observation about families' food expenditure sets a context for the endline assessment. It should investigate whether Millet Bars are an effective supplement in diets where diversity and quality might be limited by budget constraints.

For the endline study, we'll refine initial hypotheses drawn from baseline data and finalize them with AAF input. The endline will seek to discern trends, causality, and long-term effects of the Nutri Bar program, progressing from early baseline observations to a deeper comprehension of its nutritional benefits for children.

2 Evaluation Approach

The evaluation study employed the following evaluation criteria:

a) **Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD-DAC) standard evaluation criteria** (relevance, coherence, effectiveness, efficiency, impact, and sustainability)

The evaluation of the Millet Bar programme, implemented in Varanasi, India, to address malnutrition in children aged 3-6 years residing in Anganwadi Center (AWC) service areas, adopted a mixed-methods approach informed by the OECD-DAC standard evaluation criteria. This framework provides a comprehensive lens to assess the program's effectiveness, efficiency, and long-term impact.

- **Relevance:**
  - **Malnutrition Burden:** Stunting prevalence among children under 5 years in India is estimated at 31.7% (National Family Health Survey-5). The Millet Bar programme directly targets this critical age group (3-6 years) with a high vulnerability to malnutrition.
  - **Government Alignment:** The program aligns with the priorities outlined in the Government of India's POSHAN Abhiyaan (National Nutrition Mission), a flagship program launched in 2018. This mission aims to reduce stunting in children under 3 years. The Millet Bar programme, by targeting a slightly older age group (3-6 years) and promoting nutritious millet consumption, complements these broader government efforts to address child malnutrition in India.
- **Coherence:**
  - **Complementary Interventions:** The program complements existing AWC services, including hot cooked meals and take-home rations. The observed increase in AWC attendance during the program suggests it might have facilitated access to these government-provided meals, creating a more comprehensive nutritional intervention.
- **Effectiveness:**
  - **Height Increase: The DiD analysis showed a statistically significant positive** correlation between the program and increased child height, suggesting potential growth support.
  - **Weight Gain:** The analysis showed a positive trend in weight gain over time, although not statistically significant within this study. This indicates a potential for weight improvement, and further research is warranted to explore this aspect in the long term.
- **Efficiency:**
  - **Resource Utilization:** A cost-effectiveness analysis comparing the program's financial and human resource investments with the

nutritional gains achieved would be beneficial for future program optimization.

- **Impact:**
  - **Long-Term Health**: The study design focused on short-term outcomes. Further research is needed to assess the program's long-term impact on child health, including cognitive development and immunity.
- **Sustainability:**
  - **Community Ownership:** The positive community response and high attendance suggest potential for ownership and integration into existing AWC services.
  - **Government Integration:** Institutionalizing the program within the AWC framework and leveraging existing infrastructure could enhance long-term sustainability.

Data and Metrics for Further Evaluation:

- **Cost-Effectiveness Analysis:** A cost-effectiveness analysis comparing the program cost per unit nutritional improvement (e.g., increase in height-for-age Z-scores) with alternative interventions would provide valuable insights for resource allocation decisions.
- **Longitudinal Growth Monitoring:** Implementing longitudinal growth monitoring would enable tracking the program's impact on children's growth trajectories over an extended period.

By employing the OECD-DAC criteria and considering these additional metrics, future evaluations of the Millet Bar programme can provide a more robust assessment of its effectiveness, efficiency, and long-term impact on child health and well-being in the context of India's ongoing fight against malnutrition.

This research contributes significantly to understanding the effectiveness of millet-based nutritional interventions in combating childhood malnutrition. It also provides valuable insights for shaping future policies and programs in the nutrition milieu of India.

Methodological Approaches

1. The study utilized the **Difference in Differences (DiD)** method to assess the impact of the intervention on early childhood growth and development through positive nutrition intervention, focusing on the effect of millet bars on children aged **3 to 6 years** in rural areas. The DiD estimation compares outcome differences between treated and control groups before and after the intervention, enabling a comparison of changes in children's nutritional

outcomes (weight and height) before and after the program in specific blocks: **Baragaon, Harhua (control blocks), and Kashi Vidyapeeth, Arajiline, Sewapuri (intervention blocks)**. This longitudinal design, control group comparison, and ability to address confounding factors make the DiD method suitable for this evaluation, allowing for the establishment of causal relationships and actionable insights for program improvement and resource allocation.

2. **Integration of Qualitative Insights:** To complement the quantitative analysis, the study incorporated findings from key informant interviews (KIIs) and focus group discussions (FGDs). Here's why this approach was essential:

- **Programme Reception and Operational Challenges:**
  - KIIs and FGDs provided valuable insights into how the program was received by stakeholders.
  - Understanding operational challenges—such as distribution logistics, community engagement, and implementation hurdles—helped contextualize the quantitative results.

- **Socio-Cultural Context:**
  - Qualitative insights shed light on the socio-cultural factors influencing program effectiveness and sustainability.
  - By exploring local norms, beliefs, and practices, we gained a deeper understanding of how the Millet Bar programme interacted with the community.

- **Operational Feasibility and Community Acceptance:**
  - Assessing operational feasibility involved examining the consistency of program delivery. Specifically, we assessed whether millet bars and rations were consistently distributed to the target beneficiaries.
  - Understanding community perceptions was crucial. We explored how community members perceived millet bars in comparison to traditional nutritional sources like milk.

In summary, integrating qualitative insights enriched the evaluation by providing a holistic view of the program's impact, challenges, and community dynamics.

3. **Data Extrapolation:** When faced with data limitations—such as gaps or inconsistencies— extrapolation methods come into play. These methods allow us to estimate values beyond the available data points. By projecting trends and making reasonable assumptions, we gain a more comprehensive understanding, especially for the Millet Bar programme's long-term impact.

Limitations

Data Entry Challenges	The integrity of the study's findings is tempered by issues in data quality and entry efficiency. Discrepancies and delays in recording key metrics within the POSHAN Tracker system may have led to an underestimation or overestimation of the programme's true impact.
Village Drop-Off Rates	Fluctuating attendance, with a particular emphasis on the drop-off rates of children in village settings, highlighted a barrier to sustained programme engagement. Such inconsistencies in attendance could skew the data regarding the programme's efficacy.
Inconsistent Distribution in Intervention Blocks	The lack of a routine and predictable distribution schedule in IBs was observed to impact attendance adversely.
Unaccounted Control Variables	The study's design did not fully incorporate control variables, particularly the socio-economic factors that can have a profound effect on a child's nutritional status. This oversight may result in an incomplete understanding of the programme's effectiveness across diverse demographic segments.
Anganwadi Spatial Distribution	The geographical placement and distribution of Anganwadi centers were found to influence attendance rates. Uneven distribution can lead to overcrowding in some centers and underutilization in others, affecting the equitable delivery of services and the accurate assessment of the programme's reach.

3 Technical Methodology

The endline assessment study will be undertaken to cross-examine and **deep dive into the findings emerging from the baseline information** and to address implementation questions that emerge through rapid assessments and qualitative enquiries for the explanation of findings. GTB LLP, with support from Anil Agarwal Foundation will conduct the endline assessment study for strengthening evidence-based decision-making for scaling up the Millet Bar programme.

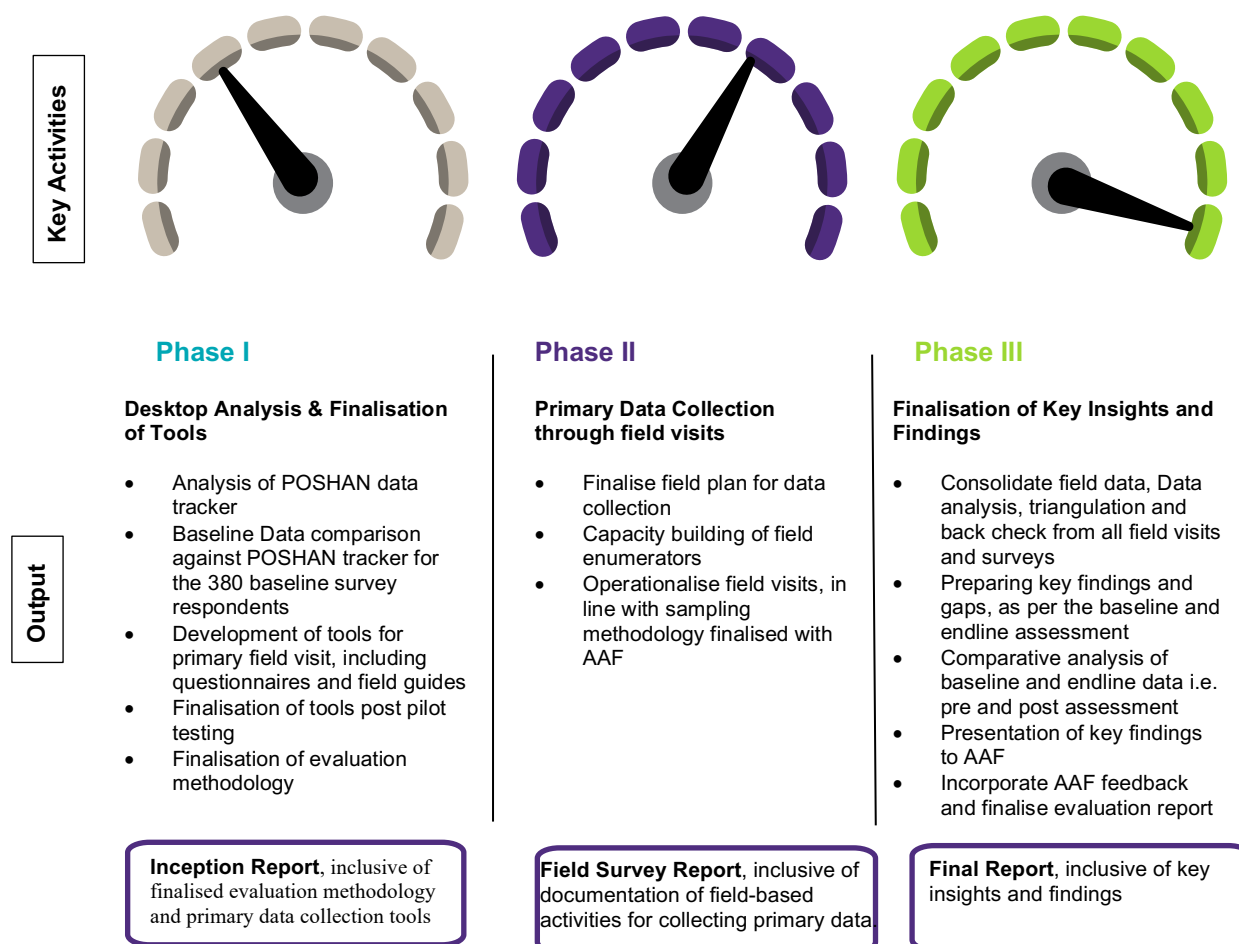The technical methodology for conducting the study has been summarised in the table given below.

Key Activities		
Phase I	**Phase II**	**Phase III**
Desktop Analysis & Finalisation of Tools	**Primary Data Collection through field visits**	**Finalisation of Key Insights and Findings**
• Analysis of POSHAN data tracker • Baseline Data comparison against POSHAN tracker for the 380 baseline survey respondents • Development of tools for primary field visit, including questionnaires and field guides • Finalisation of tools post pilot testing • Finalisation of evaluation methodology	• Finalise field plan for data collection • Capacity building of field enumerators • Operationalise field visits, in line with sampling methodology finalised with AAF	• Consolidate field data, Data analysis, triangulation and back check from all field visits and surveys • Preparing key findings and gaps, as per the baseline and endline assessment • Comparative analysis of baseline and endline data i.e. pre and post assessment • Presentation of key findings to AAF • Incorporate AAF feedback and finalise evaluation report
Inception Report, inclusive of finalised evaluation methodology and primary data collection tools	**Field Survey Report**, inclusive of documentation of field-based activities for collecting primary data	**Final Report**, inclusive of key insights and findings

Fig. 2: Technical Methodology for Conducting the Study

Summary of the key activities that the GT team will carry out are as follows:

Phase I: Creation of framework for assessing impact of Millet Bar programme

Activity 1: Desktop Analysis
The framework for desktop analysis has been elaborated below.

POSHAN Tracker Data Analysis:

a) **Data Collection**: The team will gather data of ~48,000 beneficiaries from the POSHAN Tracker, an initiative by the Government of India to monitor nutritional outcomes. Support will be required from AAF for the accessing the data from the POSHAN tracker, since the AAF team has access to the portal.

b) **Health and Nutrition Indicator Mapping**: The project team will analyse key indicators including height, weight, the prevalence of Severe Acute Malnutrition (SAM), Moderate Acute Malnutrition (MAM), stunting, and wasting. This exercise shall be contingent on the extent of data availability from the POSHAN Tracker.

c) **Delta Analysis**: The team will also identify changes (delta) across these indicators over time to indicate certain trends that may emerge from the secondary datasets. This will involve assessing the improvement or dip in nutritional and health status of beneficiaries, which will be done through an excel based analysis.

d) **Demographic Segmentation**: The team will also categorise data based on age, gender, socio-economic status, and geographic location to identify patterns and trends in different segments.

The team will conduct a detailed excel based analysis to create clear, interpretable representations of trends and patterns within the data. The insights from the analysis shall be presented to the client.

Data Comparison

a) **Identify deviations between On-ground Data and POSHAN Tracker**: The project team will a comparative analysis of the data of ~300 children with the broader dataset from the POSHAN tracker. This exercise will be conducted to spot any significant deviations or anomalies between the two data sets. This includes looking for variance in nutritional outcomes, growth patterns, and health related indicators.

b) **In-depth Research Areas**: At this stage, the team will determine areas that require further investigation or in-depth research based on observed deviations, which shall be the focus areas for the primary data collection.

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The scope of the desktop analysis shall be contingent on the quality of the baseline data collected by CSC. The extent of desktop analysis shall be fully ascertained in close consultation with key AAF staff members, post receipt of POSHAN Tracker data set from AAF team.

Activity 2: Finalisation of Research Tools

Quantitative, qualitative research tools and field inspections will be leveraged by the GTB LLP team for conducting inquiries as a part of the data collection process. The modalities will be as follows:

Quantitative Inquiry

a) **Questionnaires**: Structured questionnaires will be designed to collect quantitative data from the select communities, and associated stakeholders of beneficiaries. The questionnaires shall include closed-ended questions to gather data on socio-demographic characteristics, project outcomes, and impact indicators.

b) **Primary Data Collection**: Primary data will be conducted from district/block administration and AWCs, as per availability, to collect quantitative data on various aspects of the projects, such as improvement in nutrition indicators, health, and attendance.

4 Empirical Strategy

4.1 Key Takeaways

EFFECTIVE IMPACT OF NUTRIBAR

Collectively, these outcomes demonstrate the Millet Bar Programme's significant contributions to improving child health and nutritional outcomes, affirming the value of targeted nutritional interventions.
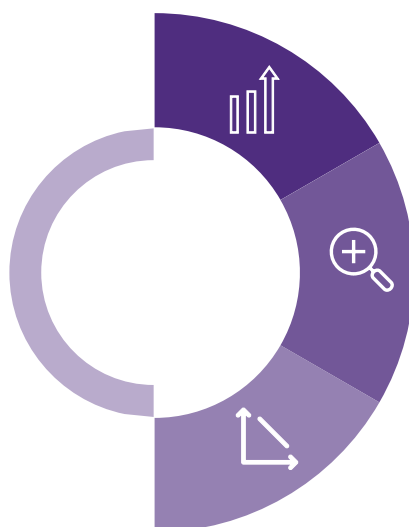
SIGNIFICANT HEIGHT GROWTH

The intervention led to a notable increase in children's height, emphasizing its effectiveness in promoting critical developmental milestones.

POSITIVE TREND IN WEIGHT GAIN

There was a clear positive trend in weight gain among participants, indicating a gradual improvement in nutritional status.

REDUCTION IN UNDERNUTRITION

A significant decrease in the proportion of underweight children was observed, highlighting the program's success in combating malnutrition.

Fig. 3: Key Takeaways of the Endline Assessment Results

Height						
Gender	Age (months)	Typical Height Standard (cm)	Typical Growth in 1 year (cm)	Average Height Recorded in Baseline (cm)	Height Recorded in Endline (cm)	Δ Height (cm)
Female	36-48	95.2	5	94.63	100.43	5.8
	48-60	102.3	5.5	96.86	102.5	5.64
	60-72	105	6	101.59	105.20	3.61
Male	36-48	100	5	95.98	100.4	4.42
	48-60	105	6	100.37	105.3	4.93
	60-72	107	6.35	104.32	107.92	3.6

Table 1: Descriptive Statistics of Growth Distribution – Height

Weight						
Gender	Age (months)	Typical Weight Standard (kg)	Typical Growth in 1 year (kg)	Average Weight Recorded in Baseline (kg)	Average Weight Recorded in Endline (kg)	Δ Weight (kg)
Female	36-48	13	1.5	12.82	14.76	1.94
	48-60	14.5	2	13.66	14.69	1.03
	60-72	15.3	2	14.22	15.88	1.66
Male	36-48	14.2	1.5	13.25	14.84	1.59
	48-60	15	2	14.33	15.30	0.97
	60-72	16.3	2	15.16	16.55	1.39

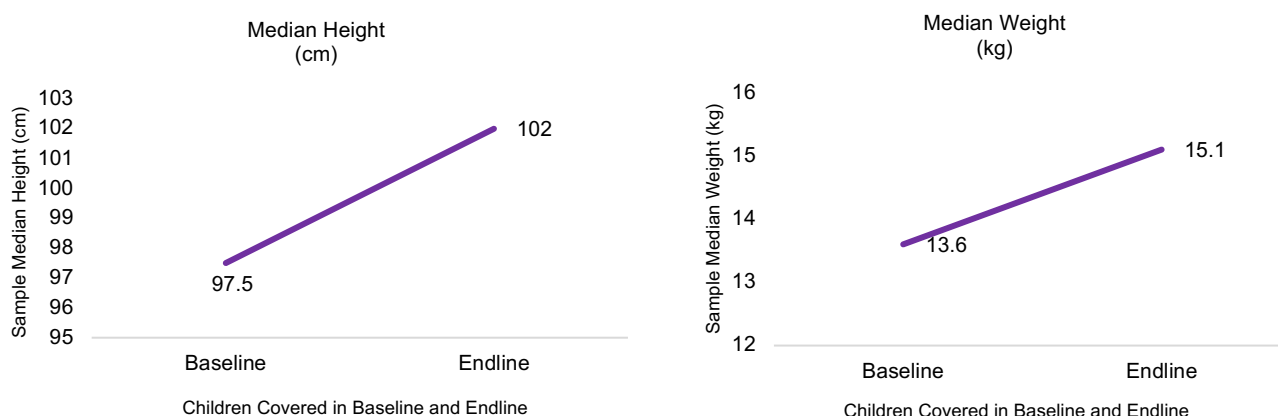*Table 2: Descriptive Statistics of Growth Distribution - Weight*

Fig. 4: Graphical Representation of Sample Median Height (cm) and Weight (kg) of Children Covered in Baseline and Endline

Sample Median Height (cm)
Figure shows an increase in median height from 97.5 cm to 102 cm, reflecting growth over the course of the study period.

Sample Median Weight (kg)
Figure depicts a rise in median weight from 13.6 kg to 15.1 kg, indicating an improvement in the weight status of the children covered in both assessments.
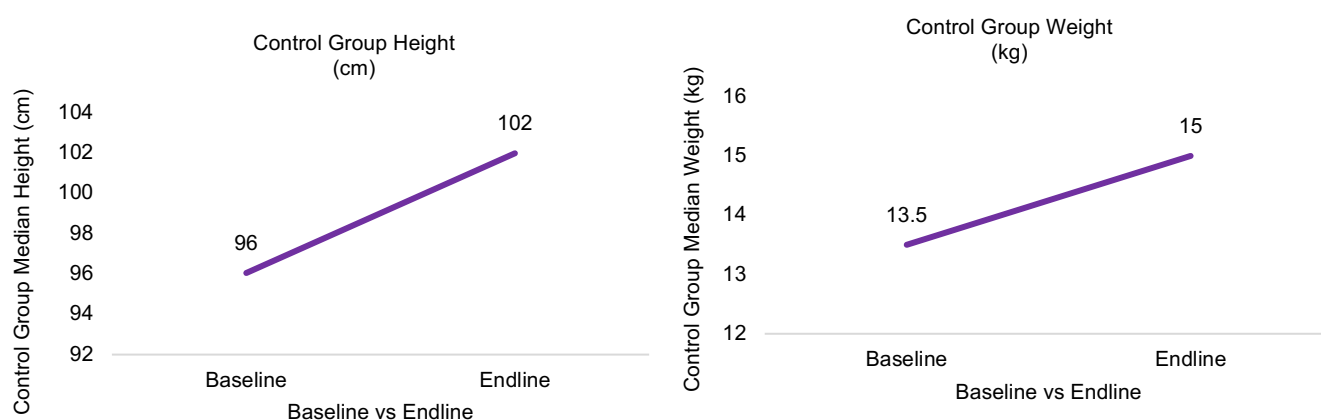

Fig. 5: Graphical Representation of Median Height (cm) and Median Weight (kg) of Children in Control Group (Baseline vs Endline)

Height (cm) of Children in Control Group (Baseline vs Endline)
Figure depicts an increase in the median height from 96 cm at the baseline to 102 cm at endline, suggesting improvement in children's stature over the course of the program.

Weight (kg) of Children in Control Group (Baseline vs Endline)
Figure shows a rise in the media weight from 13.6 kg at baseline to 15.1 kg at endline, indicating a positive change in body weight among the participating children during the same period.
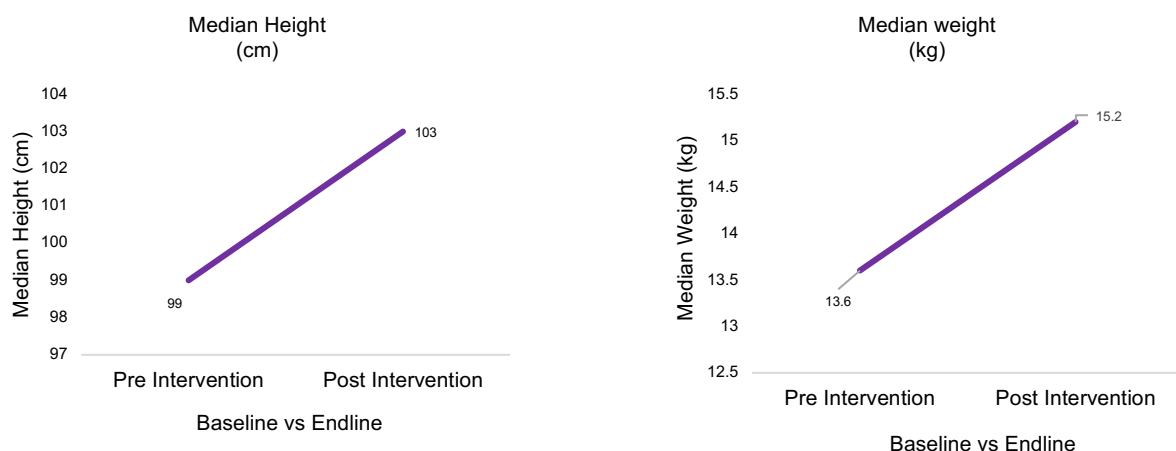
Median Height (cm)

Median weight (kg)

Fig. 6: Graphical Representation of Median Height (cm) and Weight (kg) of Children in Intervention and Control Blocks (Baseline vs Endline)

Median Height (cm) of Children in Intervention Group (Baseline vs Endline)
Figure displays a growth in median height from 99 cm before the intervention to 103 cm afterwards, indicating an apparent increase in children's average stature following the program.

Median Weight (kg) of Children in Intervention Group (Baseline vs Endline)
Figure demonstrates an upswing in median weight, with a rise from 13.8 kg before the intervention to 15.2 kg post-intervention, suggesting a favorable impact on the children's average weight during the program's duration.
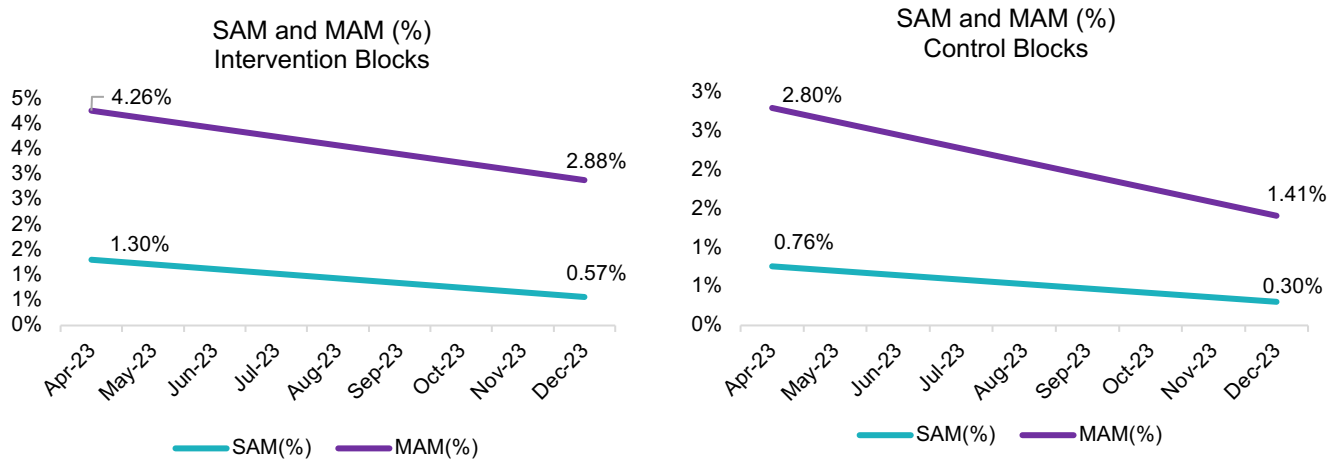

SAM and MAM (%) Intervention Blocks

SAM and MAM (%) Control Blocks

Fig. 7: Graphical Representation of SAM & MAM % of Children in Intervention and Control Blocks (Baseline vs Endline)

SAM & MAM % (Baseline vs Endline) in Intervention Blocks
Figure suggests that there is a clear decreasing trend in both SAM and MAM rates, with MAM dropping from 4.26% to 2.88% and SAM from 1.30% to 0.57% over the period from April to December - showcasing the positive impact of the nutritional intervention.

SAM & MAM % (Baseline vs Endline) in Control Blocks
Figure indicates there was also a decrease, though less substantial, with MAM rates going from 2.80% to 1.41% and SAM rates from 0.76% to 0.30%. The less dramatic declines in these blocks underscore the effectiveness of the interventions in the other areas.

The p resented data illustrates the impact of a nutritional intervention on child health across different blocks. In the intervention blocks, the incidence of Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) has seen a notable decrease from 4.26% to 2.88% for MAM and from 1.30% to 0.57% for S AM within an eight-month period. This significant reduction suggests the effectiveness of the nutritional program being implemented.

Conve rsely, in the control blocks, where the nutritional intervention was not introduced, the decline in malnu trition rates was less pronounced. MAM rates dropped from 2.80% to 1.41%, and SAM rates from 0.76% to 0.30%. Although improvements are evident, the less dramatic decline highlights the potential added value of the intervention in the treatment blocks.

These trends demonstrate the correlation between the targeted nutritional intervention and the reduction in ma lnutrition among children. They provide strong evidence supporting the expansion of such interve ntions to enhance child health and combat malnutrition effectively.

4.2 Preliminary Analysis – POSHAN Tracker Data Analysis

The evaluation of the Millet Bar Programme's impact on child nutrition required a methodical approach to data analysis. Initially, a stacked time series panel data analysis was conducted using data sourced from the POSHAN tracker. This analysis focused on a breakdown of several variables over time, including sectors, the total number of active children, and those measured for height and weight each month. Critical to this was the 'Measurement Efficiency' indicator, a derived metric indicating the effectiveness of nutritional interventions.

The panel analysis sought to track changes across multiple indicators of nutritional status, such as stunting, wasting, and underweight conditions. By examining the longitudinal data, we aimed to discern trends and improvements in child nutrition over time within the sectors analyzed. The preliminary analysis, as represented in the results, was a necessary precursor to the more sophisticated Difference-in-Differences (DiD) analysis. It established a foundational understanding of the data, ensuring that the subsequent DiD analysis was informed by a clear view of the nutritional landscape and the interplay of various factors affecting child health.

Preliminary Model for Stacked Time Series Panel Analysis

$$ln(undernutrition)_{it} = \beta_0 + \beta_1 \times ln(measurement\ efficiency)_{it} + \beta_2 \times ln(stunted)_{it} + \beta_3 \times ln(wasted)_i + \beta_4 \times ln(time)_{it} + \gamma_t + \delta_s + \varepsilon_{it}$$

This regression model was set up to assess the impact of the millet bar intervention on children's nutritional status – specifically undernutrition – among children aged 3-6 years. By using the natural logarithm in the model, the model aims to measure the percentage changes in undernutrition rates across various time points. The inclusion of variables such as measurement efficiency, stunting, and wasting allows for control over important factors that are known to influence nutritional outcomes. The time variable captures temporal trends that might affect these rates independently of the intervention. Additionally, the model includes year fixed effects and sector fixed

effects. The year fixed effects control for any time-specific influences that might affect all units in the same way, such as national economic trends or seasonal effects on nutrition. The sector fixed effects control for unobserved, time-invariant characteristics specific to different sectors that could influence undernutrition rates, ensuring that the comparison between the treatment and control groups is not confounded by these sector-specific factors.

4.2.1 Key Findings

The results from the initial panel data analysis indicated some vital findings. There were statistically significant variables such as 'Wasted' and 'Stunted', which showed strong associations with the nutritional status of the children. Importantly, the negative coefficient for 'Time' suggested an overall decrease in undernutrition over the periods assessed, implying an improvement in nutritional status. These insights, particularly the decrease in stunting and wasting over time, provided initial evidence that nutrition among the children might be improving.

The coefficient associated with 'Measurement Efficiency' was negative, suggesting that as measurement efficiency improved, the incidence of reported undernutrition decreased, which could imply that the program's efforts were effectively captured and that the quality of data and follow-up improved over time.

Moreover, the natural log transformation helped to better understand the rate of change in these indicators, offering a nuanced view of growth patterns and the potential impact of the Millet Bar Programme over time. The negative sign on 'Measurement Efficiency' indicated that increased precision in measurement was associated with a lower reported incidence of undernutrition.

The robustness of the data was further validated by the joint F-test for the named regressors and the Welch F test for differing group intercepts, both of which returned highly significant p-values, reinforcing the reliability of the observed trend.
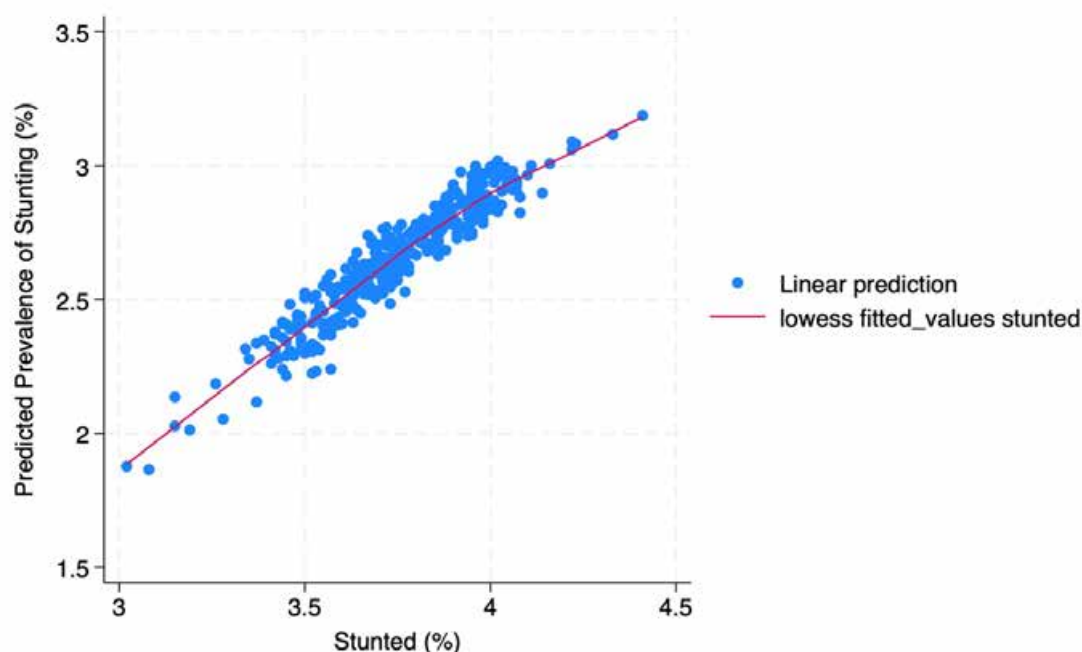
Fig. 8: Scatter Plot of a Positive Linear Relationship Between Predicted Prevalence of Stunting and Actual Stunting Rates

This scatter plot displays a positive linear relationship between the predicted prevalence of stunting and actual stunting percentages in children. Each point represents a set of observations at different stunting percentages, and the linear trend line indicates that as the percentage of stunted children increases, the predicted prevalence also rises correspondingly. The smooth red line, created using locally weighted scatterplot smoothing (LOWESS), provides non-parametric fit that illustrates the central tendency of the data, reinforcing the direct relationships between the two metrics. The cluster of data points along the LOWESS line suggests that the predictive model is consistent with the observed data across the range of stunting percentages. The close alignment of the blue dots with the fitted line indicates a strong correlation and potential predictability of stunting prevalence form the measured data.

4.3 Primary Analysis

To achieve an accurate assessment of the programme's effectiveness, we calculated a sample size of 300 children, factoring in a 90% confidence level and a 5% margin of error, which considered the highest prevalence to bolster the study's robustness.

Throughout the study, a series of comprehensive statistical models was deployed to assess the Millet Bar Programme's impact on child weight and height. These models, adhering to the Difference in Differences (DiD) methodology, were designed to measure the effect of the programme's interventions over time, while also considering a variety of control variables — ranging from individual diet to broader environmental factors — that could influence child growth.

Our endline assessment encountered a reduction in sample size; nearly 90 children, originally included in our study, were excluded due to relocation outside the designated geographical area. This led to an effective dataset of 149 observations. Nonetheless, our rigorous analysis proceeded with this revised sample, ensuring that the study's findings were both representative and insightful, thus enabling us to derive informed conclusions about the programme's success and opportunities for further improvements.

Model 1: Impact of Millet Bar Programme on Child Weight

$weight_{it} = \beta_0 + \beta_1 \times intervention\_control_{it} + \beta_2 \times time_t + \beta_3 (intervention\_control_{it} \times time_t) + \beta_4 age_{it} + \beta_5 birthweight_i + \beta_6 birthorder_i + \beta_7 waterfacility_i + \beta_8 householdhead_i + \beta_9 regularattendance_{it} + \beta_{10} housetype_i + \beta_{11} sanitationtype_i + \beta_{12} consumesnutribar_{it} + \beta_{13} milkconsumption_{it} + \beta_{14} nonvegconsumption_{it} + \beta_{15} greensconsumption_{it} + \beta_{16} eggconsumption_{it} + \beta_{17} dailymealcount_{it} + \beta_{18} weeklynutribarcount_{it} + \beta_{19} healthstatus_{it} + \epsilon_i$

This regression model details the Impact of the Millet Bar Programme on Child Weight. This model assesses the influence of an intervention designed to improve children's nutritional status by introducing millet bars into their diets. The weight of each child i at time t is the dependent variable, analyzed to determine how it is affected by various factors including the intervention, time, and their interaction— key to the Difference in Differences (DiD) analysis.

In this model:

- β_0 is the intercept, or the average weight when all other variables are zero
- β_1 captures the impact of the millet bar intervention (intervention_control).
- β_2 assesses the effect of time on weight
- β_3 is the coefficient for the interaction term, which is crucial for the DiD analysis

- β_4 through β_{19} are coefficients for control variables that may influence weight, such as child's age, birthweight, birth order, access to water facilities, household headship, regular attendance at the feeding program, the type of house and sanitation, consumption habits (nutribar, milk, non-vegetarian food, green vegetables, eggs), and daily meal count.
- ϵ_i is the error term for each child time point, capturing unobserved factors affecting weight.

The key findings were as follows:

- `time`: The variable was found to have a statistically significant positive relationship with child weight, suggesting an overall increase in weight over the study period.

Model 2: Impact of Millet Bar Programme on Child Height

$height_{it} = \beta_0 + \beta_1 \times intervention\_control_{it} + \beta_2 \times time_t + \beta_3 (intervention\_control_{it} \times time_t) + \beta_4 age_{it} + \beta_5 birthweight_i + \beta_6 birthorder_i + \beta_7 waterfacility_i + \beta_8 householdhead_i + \beta_9 regularattendance_{it} + \beta_{10} housetype_i + \beta_{11} sanitationtype_i + \beta_{12} consumesnutribar_{it} + \beta_{13} milkconsumption_{it} + \beta_{14} nonvegconsumption_{it} + \beta_{15} greensconsumption_{it} + \beta_{16} eggconsumption_{it} + \beta_{17} dailymealcount_{it} + \beta_{18} weeklynutribarcount_{it} + \beta_{19} healthstatus_{it} + \epsilon_i$

This model explored the impact of the Millet Bar programme on the height of children. Similar to the weight model, it included variables for intervention/control status, time, and their interaction. The model also incorporated covariates to account for individual and household characteristics, such as age, birth weight, birth order, access to water facilities, household leadership, type of house, and type of sanitation facility.

In this model:

- β_0 is the intercept, or the average height when all other variables are zero
- β_1 measures the difference in height between children in the intervention group, who received millet bars, compared to those who did not (control group).
- β_2 captures the time effect on height, indicating how children's height changes over the course of the study
- β_3 quantifies the interaction effect between the intervention and time, which is essential for the Difference in Differences (DiD) analysis, allowing us to isolate the impact of the intervention over time from natural growth trends.
- β_4 through β_{19} are coefficients for control variables that may influence weight, such as child's age, birthweight, birth order, access to water facilities, household headship, regular attendance at the feeding program, the type of house and sanitation, consumption habits (nutribar, milk, non-

vegetarian food, green vegetables, eggs), and daily meal count. are assigned to control variables such as age, birthweight, birth order, water facility access, household headship status, regular attendance at AWCs, type of house, type of sanitation facility, consumption of nutribars, milk, non-vegetarian foods, green vegetables, eggs, as well as the frequency of meals and the weekly consumption of nutribars. These factors are included to control for other influences on a child's height that may confound the relationship between the intervention and height outcomes.

- ϵ_i is the error term for each child time point, capturing unobserved factors affecting weight.

Key results indicated:

- `*time*`: Demonstrated a statistically significant positive effect, indicating that height increased as time progressed.
- `*waterfacility*` and `*sanitationtype*`: Both showed significant relationships with height, suggesting that environmental factors play a role in the physical development of children.

4.3.1 Key Findings

The core analysis of the Millet Bar Programme's impact on child growth metrics in Varanasi for the 3 to 6 age group utilized a Difference in Differences (DiD) approach to provide rigorous evaluation. The model was comprehensive, factoring in the program's intervention, time progression, and their interaction – a key aspect of the DiD methodology. A significant finding from the study is the positive correlation between time and increases in children's height, suggesting that the intervention may have supported physical growth. This outcome was further amplified when considering the backdrop of government nutritional schemes such as hot cooked meals and take-home rations provided through AWCs.

While height showed notable improvement, the change in weight, although positive over time, was not statistically significant. Nonetheless, the model's high reliability underscores the trend of gradual weight increase among the children, which could be attributed to improved attendance and subsequent increased access to nutritious meals at AWCs. The analysis also highlighted significant relationships between height and environmental factors like water and sanitation facilities, reflecting the complex nature of growth determinants and the potential synergistic effect of improved infrastructure on child health outcomes.

Our findings, although not showing a strong direct link to weight gain from the Millet Bar Programme, suggest the utility of combined nutritional interventions. The increased engagement at AWCs due to the programme has likely played a crucial role in this comprehensive nutritional strategy, contributing to the overall improvement in growth metrics. This study thus sheds light on the intricate

connections between various nutritional interventions and their outcomes, providing valuable guidance for future policy and program development.

The analysis of the Millet Bar programme's influence on child growth metrics within Varanasi offers insightful revelations, particularly when contextualized with government schemes and on-ground operational dynamics.

Height Outcomes: For height, the integration of millet bars catalyzed positive growth outcomes. This effect is likely augmented by government initiatives, including the provision of hot cooked meals and take-home rations, which collectively enrich the children's nutritional landscape. An increase in attendance at Anganwadi Centres (AWCs) was observed, potentially influenced by the millet bar distribution, leading to more children partaking in the government-sponsored meals. This uptick in regular meal consumption at AWCs, facilitated by both the programme and enhanced attendance, seems to have translated into significant strides in height gain among the children.

Weight Outcomes: The weight outcomes from the Millet Bar Programme's intervention in Varanasi hint at a nuanced impact on children's growth. Over the observed period, children's weights showed an upward trend, though not strong enough to be deemed statistically significant. The incremental weight gain aligns with enhanced attendance and increased access to nutritious meals at Anganwadi Centres (AWCs), facilitated by the programme and supplementary government nutritional schemes. The interplay of these factors suggests that while millet bars alone didn't lead to marked weight increases, they contributed to the broader framework of nutritional support that collectively fostered children's gradual weight gain. This insight underscores the potential of integrated nutritional strategies in promoting overall child health and development.
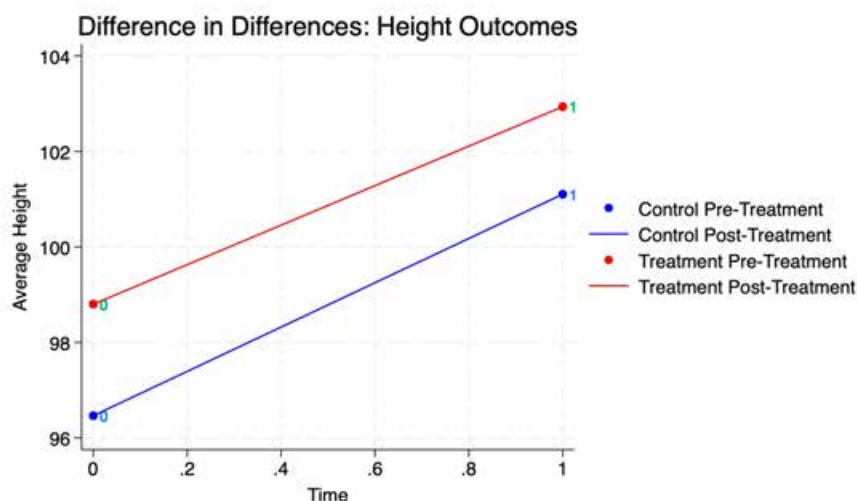
Fig. 9: Differential Growth Trends in Average Height (cm) for Children in Treatment and Control Groups Over Time (DiD)
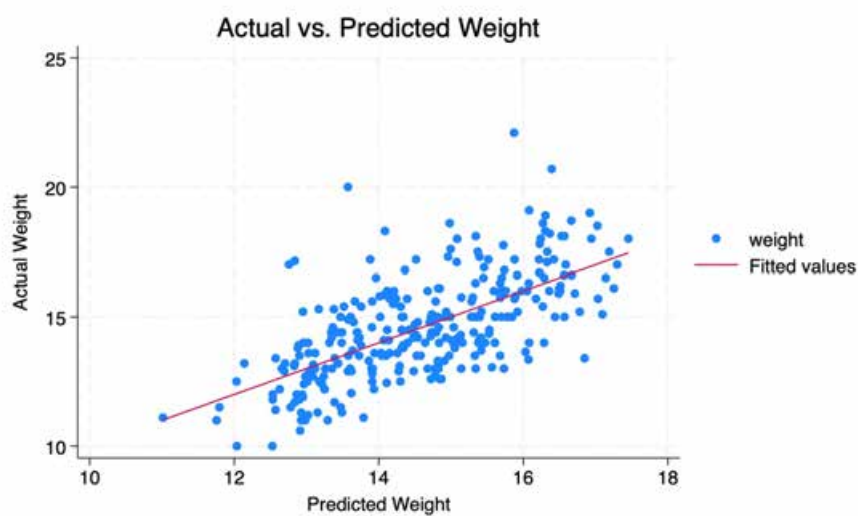

Fig. 10: Scatter Plot Depicting Positive Linear Relationship Between Predicted Weight and Actual Observed Weight (kg) of Sample

Overall Summary of Key Findings from Quantitative Analysis

The analysis of the Millet Bar Programme revealed a significant decrease in undernutrition among children in Varanasi. Wasting and stunting rates (%) were found to be strong predictors of children's nutritional status, indicating that the programme may be having a positive effect. The decline in these indicators over time was supported by a negative coefficient for 'Time', suggesting an overarching trend towards improved nutrition.

Additionally, improved 'Measurement Efficiency' correlated with a decrease in reported undernutrition, hinting at enhanced accuracy in capturing the programme's efficacy and data quality. The transformation of data using natural logarithms offered deeper insights into the patterns of change in growth metrics, further affirming the programme's potential benefits.

When integrated with government nutritional initiatives, like hot cooked meals and take-home rations, the Millet Bar Programme was associated with substantial height gains, demonstrating the importance of combined efforts in child development. However, weight outcomes were less pronounced, with no significant changes directly attributed to the programme. Nonetheless, a general trend of weight gain was noted, likely due to better attendance at nutrition centres and a holistic approach to dietary improvement.

Overall, the comprehensive approach encompassing various nutritional interventions suggests a collective contribution to the observed enhancements in child growth metrics, underscoring the value of multi-faceted nutrition strategies for child health and development. The significant outcomes in height and the patterns observed in weight highlight the complex interplay between dietary interventions, infrastructure, and healthcare practices.

5 Qualitative Methodology

Qualitative Inquiry was deployed to delve deeply into the Millet Bar programme's effects, capturing the nuanced perspectives of various stakeholders involved in or affected by the initiative. Through this approach, the study aimed to uncover detailed insights into the program's implementation, its acceptance within the community and the broader social and nutritional impacts observed.

In the comprehensive evaluation of the Millet Bar Programme, a blend of Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) was deployed to gain a multifaceted understanding of the program's impacts. KIIs were conducted with a wide array of stakeholders closely involved with or affected by the program. These included parents of children attending the Anganwadi centers, which are at the heart of the program's target demographic, providing firsthand perspectives on its effects on their children's health and nutrition. Interviews were also held with Anganwadi workers, Sahayikas (helper), Lady Supervisors, and Child Development Project Officers (CDPOs), who play pivotal roles in the program's day-to-day operations and overall administration. These conversations, carried out in the local language, offered deep insights into the program's operational challenges and successes, painted from the diverse viewpoints of those on the ground.

Additionally, to gauge the collective community response and assess the program's broader implications, one FGD was conducted in each of the intervention blocks: Sewapuri, Arajiline, and Kashi Vidyapeeth. These discussions pulled together various influential community members and parents. The choice of participants aimed to capture a wide spectrum of community influence and insight into how the program is perceived and its integration into local norms and behaviours.

The FGDs provided a dynamic forum for airing collective opinions and experiences, enabling the research team to capture a comprehensive view of the program's effectiveness, relevance, and potential for long-term sustainability. Observations of these group interactions further illuminated community acceptance levels, the likelihood of sustained behaviour change towards improved nutritional practices, and the feasibility of replicating the program's success in similar contexts. Together, these qualitative inquiries enriched the evaluation with nuanced understandings of the Millet Bar Programme's impact, directly informed by the experiences and perceptions of those it aimed to benefit.

Phase II: Primary Data Collection through field visits

During Phase II of the project, the focus shifted towards comprehensive Primary Data Collection through meticulously planned field visits. This crucial phase began with the finalization of a field plan for data collection, where the project team, in collaboration with the Anil Agarwal Foundation (AAF), delineated a detailed strategy. This plan

encompassed identifying specific locations within the three intervention blocks where data collection occurred, establishing a clear timeline for these activities, and deciding on the mixed-methods approach that combined both quantitative and qualitative methodologies for a holistic data gathering process.

To ensure the smooth execution of field activities, logistical arrangements were planned, and the project team coordinated with AAF to organize essential logistics, including transportation and accommodation, for the field team members who conducted the data collection. This logistical support was crucial for facilitating seamless access to the designated sites and ensuring that the team could perform their duties effectively and efficiently.

A significant aspect of this phase involved establishing strong coordination with local authorities and stakeholders at the block level. The field team engaged with these pivotal figures within the AWC ecosystem, who play a critical role in the community's nutritional and educational frameworks. Through AAF's assistance, connections were made with local Anganwadi centers and regional stakeholders, ensuring that the data collection process was not only efficient but also aligned with the community's needs and expectations. This collaborative approach underscored the importance of local engagement and support in facilitating primary data collection, enabling the team to gather valuable insights directly from the intervention's heart.

During Phase II, the project undertook significant steps to ensure the effectiveness of the fieldwork, starting with the comprehensive capacity building of field enumerators.

Activity 2: Capacity Building of Field Enumerators

The project team successfully conducted detailed training sessions for the field enumerators who were deployed for the primary survey. These sessions covered a wide range of essential topics, including the use of data collection tools, interview techniques, and the critical ethical considerations such as obtaining informed consent and ensuring data privacy. The aim was to equip the enumerators with the knowledge and skills necessary to collect data efficiently and respectfully.

An integral part of the capacity-building exercise was to imbue enumerators with a thorough understanding of the Millet Bar programme, including its objectives and anticipated outcomes. This deep dive into the programme's details ensured that enumerators were well-prepared to collect relevant data, understand the nuances of the project's impact, and effectively communicate with participants.

To ensure the integrity of the data collection process, the project team implemented several quality control measures. These included regular debriefing sessions and spot checks with the field enumerators, alongside the preparation of Standard

Operating Procedures (SoPs) to standardize the data collection activities. These steps were crucial in maintaining the accuracy and reliability of the collected data.

Moreover, the capacity-building sessions underscored the importance of cultural sensitivity. Enumerators received training on local customs and cultural nuances within Varanasi District, ensuring respectful and effective interactions with community members throughout the data collection process.

Activity 3: Operationalising Field Visits

Field visits were planned and executed in alignment with the sampling methodology previously finalized with the Anil Agarwal Foundation (AAF). The scheduling of these visits was carefully coordinated to adhere to the sampling plan, ensuring comprehensive data collection across the targeted areas.

A robust system for ongoing monitoring and support was established for the duration of the field visits. This included daily check-ins with the field teams and the provision of real-time troubleshooting support to address any challenges that arose promptly. Such continuous monitoring was instrumental in facilitating the smooth progress of field activities.

Furthermore, strict adherence to the established SoPs was maintained throughout the field visits. This adherence was critical in ensuring the consistency and reliability of the data collection process, contributing to the overall success of the endline assessment exercise. These measures collectively ensured that the field visits were conducted efficiently, with a high level of professionalism and sensitivity to the community's needs.

Phase III: Finalisation of key insights and findings

The third and final phase of the Millet Bar Programme evaluation involved synthesizing data collected from the field, analyzing it to draw meaningful insights, and preparing a comprehensive evaluation report. The key activities that will be undertaken at this stage are as follows:

The project team embarked on a systematic collection and aggregation of data obtained from field enumerators, utilizing the Computer Assisted Personal Interviewing (CAPI) methodology for efficiency and accuracy. An online tool, 'Clappia', previously leveraged by GTB LLP for similar field-based data collection endeavors, was considered for this purpose. The selection of the final online tool was made in consultation with the Anil Agarwal Foundation (AAF), ensuring alignment with project needs and stakeholder expectations.

Following data aggregation, a process of data verification and cleaning was undertaken to guarantee the data's accuracy and completeness. The team

addressed any discrepancies or missing information and established Standard Operating Procedures (SoPs) for a back-check of the collected data. This step was critical in verifying the reliability of the information gathered during field visits.
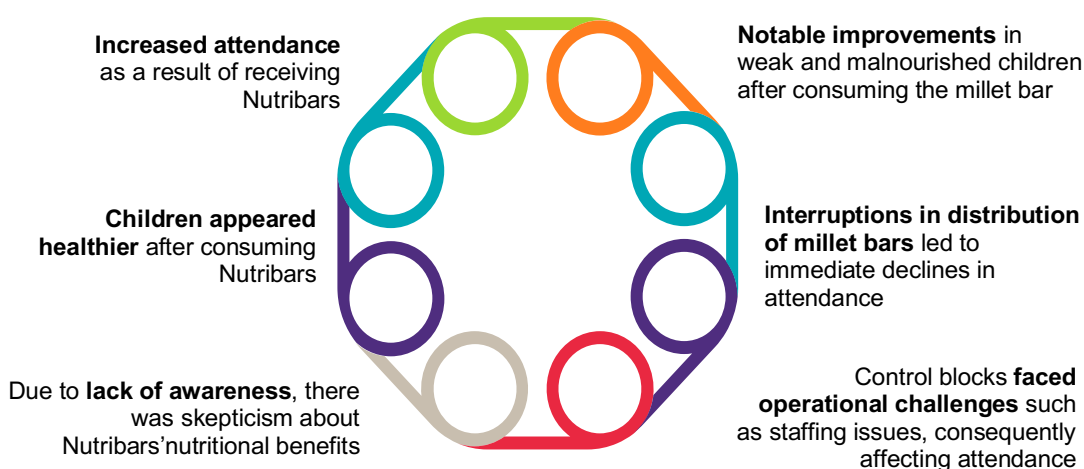
To bolster the findings' robustness, data triangulation was employed, integrating information from Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), quantitative data from AWCs concerning key health and nutrition metrics of the children, and secondary data sources, including the POSHAN tracker. This approach ensured a multi-dimensional view of the impacts and outcomes of the programme.

A preliminary analysis was conducted to spotlight immediate insights or notable trends based on various data segments such as gender, age, and income. This initial scrutiny paved the way for a more thorough examination of the data, employing advanced statistical methods like Difference in Differences and Propensity Score Matching, aimed at unraveling deeper insights and impacts of the intervention.

5.1 Results of Qualitative Assessment

The qualitative assessment of the Millet Bar programme was conducted across various blocks to gather in-depth insights into community perceptions of the initiative. Spanning a diverse landscape of rural communities, the evaluation encompassed several Anganwadi Centers, each representing a unique demographic and socio-economic milieu.

Key Findings

Increased attendance as a result of receiving Nutribars

Notable improvements in weak and malnourished children after consuming the millet bar

Children appeared healthier after consuming Nutribars

Interruptions in distribution of millet bars led to immediate declines in attendance

Due to **lack of awareness**, there was skepticism about Nutribars'nutritional benefits

Control blocks **faced operational challenges** such as staffing issues, consequently affecting attendance

Qualitative Assessment Approach

To systematically measure the effectiveness of the programme and gauge community response, the assessment was structured around defined parameters.

These parameters were stratified into two distinct categories based on the data collected:

- The **Positive** parameter denotes a high attendance rate, with the majority of children in the area attending regularly, an overall health status among the children, and an increase in weight and height over the last six months, irrespective of the direct impact of millet bar consumption, and extremely favorable sentiment among the parents.

- **Neutral** parameter presents the proportion of responses that neither expressed positive nor negative sentiments.

- **Contrasting views** indicated a lower attendance rate, frequent drop-offs, irregularities in the provision of rations, and unfavourable sentiment among the parents with respect to the nutribar intervention.

Sentiment Distribution in Intervention Block
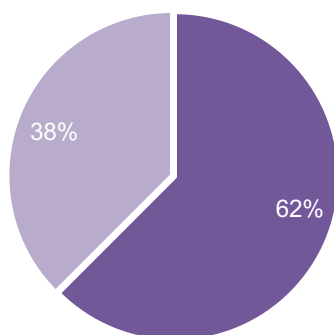
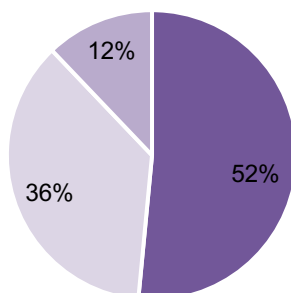## Sentiment Distribution in Control Blocks
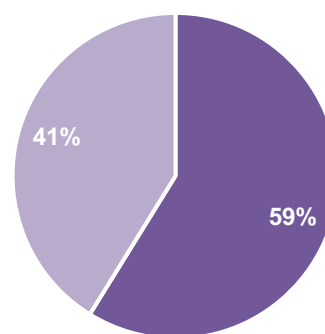
Fig. 11: Sentiment Distribution in Intervention and Control Blocks

Sentiment Distribution in Intervention and Control Blocks

The sentiment analysis from qualitative assessments reveals differing perspectives between intervention and control blocks regarding the Millet Bar Programme. The left figure displays that in the intervention block, a significant majority (62%) holds a positive sentiment towards the millet bars, reflecting their perceived effectiveness, with the remaining 38% expressing neutral sentiments. This indicates a general endorsement of the intervention's efficacy in the consumption of these bars. Meanwhile, the right figure illustrates that although there were contrasting opinions within the control blocks, a sizable portion of respondents (59%) still reported positive feedback. Notably, 41% of responses were neutral, with no negative sentiments reported, suggesting an increase in attendance nonetheless due to nutribar distribution. These distributions underscore the program's overall acceptance and the associated behavioral impact on attendance at distribution points.

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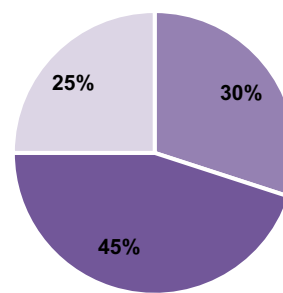
Positive Responses

52%
36%
12%

■ Mothers ■ AWWs ■ Community (ASHA, ANM, CDPO)

Contrasting Opinions

25%
30%
45%

■ Mothers ■ AWWs ■ Community (ASHA, ANM, Sahayaika)

Fig. 12: Sentiment Distribution Across Interviewed Stakeholders

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Conclusion from Qualitative Assessment

The pie charts offer an encouraging view of the feedback received regarding a particular program, highlighting predominantly positive reactions from various stakeholders.

The 'Positive Responses' chart reflects a substantial endorsement from mothers, who represent over half of the favorable opinions at 52%. This suggests that the program resonated well at the family level, where the impact on children's well-being is most directly observed and valued. Anganwadi Workers (AWWs), who are integral to the program's on-ground execution, contributed a significant 36% to the positive feedback, indicating their satisfaction with the program's outcomes or processes. Community health workers (comprising ASHA, ANM, and CDPO) also shared positive feedback, albeit at a smaller fraction of 12%, rounding out a holistic affirmation from all involved parties.

The 'Contrasting Opinions' pie chart, while representing diverse perspectives, shows that even among those with reservations or differing views, a large proportion of community health workers (45%) still engaged with the program enough to provide feedback. AWWs, at 30%, and mothers, at 25%, also contribute to this segment, providing constructive insights.

Overall, the collected responses signal a successful reception of the program. The high rate of positive feedback, particularly from mothers, emphasizes the program's acceptance and effectiveness, while the contrasting opinions offer valuable perspectives that could guide future improvements, ensuring the program continues to align with the needs and expectations of its beneficiaries and implementers.

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5.1.1 Impact of the Millet Bar Programme: A Qualitative Assessment

| Positive Impact | Challenges | Programme Saturation | Contrasting Perspectives |

In **Kashi Vidyapeeth**, mothers reported noticeable improvements in their children's health and enthusiasm for attending Anganwadi centers. Many children showed increased weight and cognitive sharpness, which was attributed to the consumption of millet bars. This positive impact on health and attendance was also reflected in the increased attendance rates reported by Aanganwadi workers. However, there were signs of saturation as the novelty of the bars wore off, indicating a need for sustained program delivery and innovation to maintain interest and impact.

Similarly, in **Sewapuri,** the "toffee bars" were a favorite among children, leading to improved attendance and health outcomes. Parents and workers noted not only increased attendance but also significant health improvements among children consuming the bars. The program's cessation resulted in decreased attendance, highlighting the bars' role in incentivizing attendance. Despite some misconceptions about the bars' nutritional value, the overall impact of the program was deemed significant in improving children's health and attendance.

| Positive Impact | Challenges | Programme Saturation | Contrasting Perspectives |

Arajiline faced challenges with irregular distribution, which impacted attendance and participation. However, regular distribution of the bars correlated with increased attendance and positive health outcomes. Focus Group Discussions (FGDs) with mothers reinforced these observations, with reports of increased attendance due to the millet bars, and children being more active and healthier. An encouraging finding was the report of children's increased activity, improved cognitive sharpness, and overall happiness. This was complemented by observed weight gains, with children averaging a 2kg increase over three months. The workers did note that the cessation of millet bar distribution led to a drop in attendance.

| Positive Impact | Challenges | Programme Saturation | Contrasting Perspectives |

As the Millet Bar Programme became an established part of the children's routine, signs of saturation began to emerge, suggesting that the initial surge in enthusiasm and attendance could wane over time. This highlighted the necessity for continuous innovation within the programme to keep the community engaged and to sustain the children's interest in participating.

In **Harhua,** fluctuating attendance rates were observed, primarily due to family mobility and unfamiliarity with the millet bars. Operational challenges, such as limited staffing and irregular ration supply, further hindered consistent attendance. Despite these challenges, children attending the centers were generally described as healthy, although the sporadic provision of rations was cited as a barrier to sustaining consistent attendance levels.

Baragaon exhibited varied experiences, with logistical issues and irregular ration distribution affecting attendance and child health in some centers. The absence of targeted nutritional interventions like millet bars limited the potential for more uniform improvements in child nutrition. Despite challenges, some centers showed good attendance and overall child health, indicating pockets of effective program implementation.

Conclusion from Qualitative Assessment

The qualitative assessment of the Millet Bar programme highlighted its positive impact on children's health and attendance in the intervention blocks. However, challenges such as irregular distribution and operational difficulties in control blocks underscored the need for sustained efforts in program delivery and community education. Addressing these challenges will be crucial in enhancing the program's effectiveness in improving child health and nutrition in rural areas. Overall, the sampling criteria was met, and no SAM/MAM children were recorded in the endline.

Anecdotal Evidence

"Since the distribution of the 'chocolate bar' as a millet bar, children enjoy going to the Anganwadi centre more, and an observable improvement in health is reported, with Armaan's weight increasing from 7kg to 10 kg."

"Despite the irregular ration distribution, the appreciation for the taste of the nutribar and its perceived health benefits is clear among the children and parents."

6   Recommendations

In light of the insights gathered from the qualitative and quantitative assessments, a comprehensive set of recommendations has been developed to bolster the nutritional landscape and augment the well-being of children aged 3 to 6 years. These recommendations are aimed at addressing the multifaceted challenges identified in the implementation of the Millet Bar programme and similar nutritional interventions:

Child Tracking, Follow-up, and Verification of Nutritional Status:

Develop and implement robust strategies for the consistent tracking of children over time, integrating regular follow-ups, improved communication channels with parents, and the use of ICT for timely updates on children's nutritional status. Additionally, conduct periodic physical measurements for a representative sample of children to cross-verify data recorded in the Poshan Tracker, validating nutritional assessments and ensuring intervention accuracy.

Promotion of Millet Bars and Nutritional Education:

Implement IEC and Behavior Change Communication (BCC) strategies to educate the treatment group about the nutritional benefits of millet bars and the importance of balanced nutrition intake. Provide periodic information dissemination sessions among the treatment group to help them understand the nutritional value of millet bars and how they contribute to overall health and well-being. These sessions should emphasize the significance of incorporating millet bars into daily dietary habits to ensure adequate nutrient intake for children aged 3 to 6 years.

Dietary Diversification and Education:

Launch targeted community education and awareness programs via IEC and BCC to promote the importance of a balanced diet, incorporating indigenous local produce that is cost-effective and readily available. These initiatives should aim to diversify dietary habits, integrating essential macro and micronutrients from locally sourced foods, and address cultural misconceptions regarding nutrition. By emphasizing the inclusion of indigenous plants and local produce, communities can access nutritious options that are both culturally relevant and economically viable, contributing to improved dietary diversity and overall health outcomes.

Cultural and Behavioral Interventions:

Implement targeted interventions and awareness campaigns to address cultural beliefs and practices that adversely affect children's nutrition. This includes dispelling myths about certain foods and promoting healthier dietary choices within the community.

Storage and Supply Chain Management:

Implement end-to-end real-time tracking systems for millet bars across the supply chain, from producers to Anganwadi centers. This entails leveraging technology to monitor inventory levels, track shipments, and ensure timely delivery. Additionally, provide comprehensive training to Anganwadi workers and Sahayikas on proper storage requirements for millet bars to maintain their nutritional quality and safety. This includes guidelines on temperature control, hygiene practices, and inventory management techniques to always minimize wastage and ensure adequate inventory at all times.

Family Engagement for Enhanced Child Health and Nutrition:

Encourage the active involvement of family members other than mothers in efforts to improve child health and nutrition. Develop outreach programs and workshops targeting fathers, grandparents, and other caregivers to raise awareness about the importance of nutrition and healthy practices for children aged 3 to 6 years. By engaging the broader family network, we can create a supportive environment where all members are equipped with the knowledge and skills necessary to contribute to the well-being of the children. This holistic approach fosters a sense of collective responsibility and empowers families to work together towards improving child health and nutrition outcomes.

7 Annexure

7.1 FORM 1: FIELD PLAN

Qualitative Assessments with Stakeholders In 5 Blocks – Field Plan

Day 1 to Day 3: Overview

Control Blocks (CG): Baragaon, Harhua

Intervention Blocks (IG): Kashi Vidyapeeth, Arajiline, Sewapuri

- **Stakeholder Engagement –** Parents, Anganwadi (AWC) Workers, Community Members, Sarpanch, ASHA/ANM Workers, Child Development Project Officer (CDPO), and District Programme Officer (DPO)

Cross-Block Strategies

A) Intervention blocks (Kashi Vidyapeeth, Sewapuri, Arajiline) –

- Focus FGDs on groups more directly impacted by the intervention (parents, community members) to gauge community-level outcomes.
- Conduct KIIs with Anganwadi workers across all blocks to obtain nuanced insights into program implementation and challenges, given their direct role in community nutrition and health.
- Use KIIs with CDPOs and DPOs in both control and intervention blocks to understand the broader administrative and policy framework affecting nutritional interventions.

B) Control blocks (Harhua, Baragaon) –

- Reverse the focus – conducting FGDs with Anganwadi workers and KIIs with parents and community members to contrast with the intervention blocks' strategies.

Detailed Logistics

The distance from Varanasi to each block is as follows: Kashi Vidyapeeth (7.5 km), Arajiline (25 km), Sewapuri (32 km), Baragaon (40 km), and Harhua (13 km). The average distance between blocks is Approx. 15-30 km (All calculated from Varanasi City).

Scheduling: FGDs limited to 60-90 minutes, KIIs to 30-45 minutes. Buffer times included for travel and unforeseen delays.

Field Visit Execution

Travel plan has been proposed according to the Blocks closest to Varanasi:

- **Day 1**: Kashi Vidyapeeth & Harhua – Closest to the main city, only 14 kilometers apart.
- **Day 2**: Sewapuri & Baragaon – Approx 14 kilometers apart
- **Day 3**: Arajiline – Approx. 20 km from the main city.

Proposed plan to cover all 5 blocks within 3 days for qualitative interviews with key stakeholders:

		Visiting Blocks	Logistics
Day 1	IG	Kashi Vidyapeeth	- FGD with 6-8 parents. 1 KII with Anganwadi workers 1 KII with the DPO. 1 KII with Sarpanch 1 KII with ASHA/ANM workers.
	CG	Harhua	2 KIIs with parents. 1 KII with a CDPO. 1 KII with a community member. 1 KII with Sarpanch 1 KII with ASHA/ANM workers.
Day 2	IG	Sewapuri	- FGD with 6-8 community members. 1 KII with Anganwadi workers 1 KII with a CDPO 2 KIIs with parents 2 KIIs with ASHA/ANM workers
	CG	Baragaon	2 KIIs with parents. 1 KII with CDPO. 1 KII with ASHA/ANM workers.
Day 3	IG	Arajiline	1 KII with Anganwadi workers 2 KIIs with community members. 2 KIIs with ASHA/ANM workers

7.2 FORM 2: QUANT ASSESSMENT TOOL

Demographic Data	Input	Unit	Responses
District	Fixed field		*Varanasi*
Block	Drop down		*Kashi Vidyapeeth / Arajiline / Sewapuri / Baragaon / Harhua*
Village	Text field		*<<enter text in English>>*
Anganwadi Name	Text field		
Anganwadi Code	Numerical field		*<<enter numerical code>>*
Is it Nand Ghar	Radio button		*YES / NO*
If Yes, Nand Ghar Name	Text field		*<<enter text in English>>*
If Yes, Nand Ghar code	Numerical field		*<<enter numerical code>>*
Beneficiary Data			
Child Name	Text field		*<<enter full name of the child in English>>*
Mother Name	Text field		*<<enter full name of the child in English>>*
Father Name	Text field		*<<enter full name of the child in English>>*
Age (months)	Drop Down		*Range << 36 – 72 Months>>*
Height (cm)	Drop down	In cm.	*<< 75 cm – 115 cm>>*
Weight (kg)	Drop down	In kg.	*<<10 kg – 25 kg>>*
Is Child Healthy?	Radio button		*YES / NO*
If No, is the child SAM / MAM	Radio button		*<<SAM/ MAM>>*
Does child consume non-veg	Radio button		*YES / NO*
If No, does child consume Eggs	Radio button		*YES / NO*
Does child consume leafy vegetables	Radio button		*YES / NO*
Did Child Consume Millet Bar	Radio button		*YES / NO*
Number of days Millet Bar consumed in a week	Numerical field		*<<Range between 0 – 7>>*
Number of Meals Consumed Daily	Numerical field		*<<Range between 0 – 10>>*
Drinking water at Household	Radio button		*Owned/ Community*
Sanitation facility at Household	Radio button		*Owned/ Community*
Housing situation of the household	Radio button		*Kaccha/ Pucca/ Semi-Pucca*
Monthly Income of the household	Drop Down		*Upto 2,500/ 2,500-5,000/ 5,001 – 7,500/ 7,501 – 10 000/ >10,000*
			Responses to below questions will be input in <<text>> by assessor based on discussion
Anganwadi Workers 1. Have parents frequently been collecting THR/HCMs? 2. Which other organisations are providing nutrition? 3. How is the overall nutrition landscape of children? 4. Has there been a reduction in malnutrition?			*<<leave blank for open-ended responses>>*
Community Members / Others 1. Who all have you communicated with about the children receiving millet bar?			*<<leave blank for open-ended responses>>*

Demographic Data	Input	Unit	Responses
2. Have you heard of any parents/children that have talked about millet bars or collecting THR or HCMs? 3. What other organisations are working on nutrition related interventions in the area?			
Parents 1. What kind of changes have you noticed in the child in the last 6 months? (Behavior/Appetite/Body changes) 2. Did you feel like the millet bar was a good addition to your child's diet?			*<<leave blank for open-ended responses>>*
Other Comments from Parents/ Community Members/AWC Workers			*<<leave blank for any additional comments>>*

7.3 FORM 3: QUALITATIVE ASSESSMENT TOOL

**MILLET BAR INTERVENTION QUESTIONNAIRE, 2024
(PARENTS)**

Village: /_____/**District:** /_____/
Block: /_____/ **Parent Name** /_____/
Date: /_____/ **Investigator's name(s):** /_____/

ABOUT ANGANWADI CENTERS

1. Does your child go to a Anganwadi Center?

1.1 If YES, Answer below (If Answer is NO to 1, Proceed to 1.2)

1.1.1 How often do they go?

1.1.2 How do they go to the Anganwadi center?

1.1.3 How many times have they been going in the last 6 months?

1.1.4 Are you aware if the Anganwadi Center has been converted to a Nand Ghar?

If YES, Answer below (If Answer is NO, Proceed to 1.2)

1.1.4.1 What are the facilities offered at these Nand Ghars which were not there earlier at the Anganwadi centers?

1.1.4.2 Does your child talk about the facilities at these Nand Ghars?

If YES, Answer below (if Answer is NO, Proceed to 1.2)

1.1.4.3 Which facilities do they talk about the most?

1.2 If NO, Answer below

1.2.1 What is the reason your child is not attending Anganwadi Center?

1.2.2 Are there external factors affecting attendance, like distance or timing?

ABOUT THE INTERVENTION

2. Have you heard of any millet bar intervention in the past year?

    2.1. If YES, Answer below (If answer to 2 is NO, proceed to 2.2)

        2.1.1. How did you come to know about the millet bar intervention?

        2.1.2. Has your child received the millet bar?

            2.1.2.1. If YES, Answer below

                2.1.2.1.1. How often have they received the millet bar?

                2.1.2.1.2. Are they consuming it?

                2.1.2.1.3. Has anyone else in the family tasted the millet bars?

Answer below IF Child has received 6 Bars per week (IF less than 6 bars, proceed to 2.1.2.2)

                2.1.2.1.4. Explain overall health of child.

                    2.1.2.1.4.1. Have you noticed increase in appetite of your child?

                    2.1.2.1.4.2. Have you noticed changes in their energy levels?

- Playful nature? Agile/Dull?

- Changes in mood?

- Have they asked to have the millet bar more often?

2.1.2.1.5. In the last 6 months, have you been tracking your child's height and weight?

2.1.2.1.6. Have you noticed changes in their height or weight in last 6 months?

2.1.2.1.7. Are you also receiving/collecting THRs or HCMs?

2.1.2.1.8. What suggestions or feedback do you have regarding the millet bar intervention program?

2.1.2.2. Answer below IF child received LESS than 6 Bars:

2.1.2.2.1. Explain what kind of barriers or challenges in accessing the millet bars for your child?

- Attendance?

- Distance?

- Other issues? Specify.

2.2. If NO, Answer below

2.2.1.1.1. Are you aware that other children have received the millet bar?

2.2.1.1.2. In your opinion, has there been a difference in the children that have consumed millet bar?

MILLET BAR INTERVENTION QUESTIONNAIRE, 2024
(ANGANWADI WORKERS)

Village: /_____**/District: /**_____**/**
Block: /_____**/ Parent Name /**_____**/**
Date: /_____**/ Investigator's name(s): /**_____**/**

ABOUT ANGANWADI CENTERS

1. How many children are enrolled in the Anganwadi center?

2. How many children are enrolled within the age group of 3 to 6 years are in the catchment area of this Anganwadi?

3. How many of the enrolled children visit Anganwadi center regularly?
   3.1. 4 times/Week – Regular
   3.2. < 4 times/Week – Irregular

4. How frequently do the children you work with attend the Anganwadi center?

   4.1. How many times have these children visited the center in the last 6 months?

5. How many of the children enrolled at Anganwadi center are malnourished?

   5.1. Specify how many classify as severely malnourished (SAM)

   5.2. Specify how many classify as moderately malnourished (MAM)

ABOUT THE INTERVENTION

6. Have you been informed about any millet bar intervention in the past year?

   6.1.1. If YES, Answer below (If answer to 6 is NO, proceed to 6.2)

   6.1.2. How did you come to know about the millet bar intervention?

6.1.3. How are these children getting the millet bars?

- What is the process?

- Who is distributing it?

- Have you distributed the bars to these children?

6.1.4. Have you facilitated the distribution of millet bars to the children coming to the center?

IF Answer is YES to 6.1.4, Please respond to the below, Otherwise, SKIP to 6.1.9

6.1.5. How often have you received the millet bar? How often does the distribution take place?

- How frequently does it get replenished?

6.1.6. What is the quantity of the millet bar you received per child per week?

6.1.7. How many children previously labeled as SAM or MAM have improved or recovered from their malnutrition in the last 6 months?

6.1.8. How many children have been labeled as SAM or MAM in the last 6 months?

- Specify level of engagement with parents of children in SAM or MAM in last 6 months.

- Specify level of engagement with the child in SAM or MAM in the last 6 months?

6.1.9. Do the parents of the children enrolled collect Take Home Rations (THR) and Hot-Cooked-Meals (HCM)

If YES, Answer below; Otherwise, SKIP to 6.1.10
- How often are they getting/collecting THRs and/or HCMs?

- How often are the Anganwadi workers distributing these THR an HCMs?

6.1.10. Did you notice any positive/negative response from the parents of children receiving the millet bars? (Elaborate)

6.1.11. Have you encountered any barriers or challenges in distribution of the millet bars for the children?

6.1.12. Describe what you think could be done differently or improved.

6.2. If NO, Answer below

6.2.1. Are you aware of other children within your purview who have received millet bars? (Yes/No – Why/Why not?)

MILLET BAR INTERVENTION QUESTIONNAIRE, 2024
(COMMUNITY MEMBERS)

Village: /_____/District: /_____/
Block: /_____/ Member Name /_____/
Date: /_____/ Investigator's name(s): /_____/

ABOUT ANGANWADI CENTERS

1. Do the children in your community go to a Anganwadi Center?

    1.1. If YES, Answer below

        1.1.1 Are these Anganwadi Centers also Nand Ghars?

        1.1.2 What is your idea of how frequently the children visit these Anganwadi Centers?

        1.1.3 Are you aware if the Anganwadi Center has been converted to a Nand Ghar?

If YES, Answer below (If Answer is NO, Proceed to 1.2)
        1.1.3.1 What are the facilities offered at these Nand Ghars which were not there earlier at the Anganwadi centers?

        1.1.3.2 Do other parents/children/community members talk about the facilities at these Nand Ghars?

If YES, Answer below (if Answer is NO, Proceed to 1.2)
        1.1.3.3 Which facilities do they talk about the most?

    1.2 If NO, Answer below

        1.2.1 What do you think might be the reason that the child is not attending Anganwadi Center?

        1.2.2 What external factors do you think are affecting attendance, like distance or timing?

ABOUT THE INTERVENTION

2 Have you heard of any millet bar intervention in the past year?

    2.1 If YES, Answer below (If answer to 2 is NO, proceed to 2.2)

        2.1.1 How did you come to know about the millet bar intervention?

        2.1.2 Have the children in your community received millet bars?

        2.1.2.1 If YES, Answer below (If answer to 2.1.2.1 is NO, proceed to 2.1.2.2)

            2.1.2.1.1 What are your views on children receiving millet bars?

            2.1.2.1.2 How would you describe the impact of the millet bar intervention on the children and the community?

            2.1.2.1.3 What do other community members think about the millet bar intervention?

            2.1.2.1.4 Would you want your community members to regularly incorporate the millet bars into their diet?

            2.1.2.1.5 What kind of conversations have you had with the children and parents regarding the intervention?

        2.1.2.2 If NO, Answer below

            2.1.2.2.1 What kind of challenges/barriers do you think exist that may not have allowed for the spread of millet bar intervention.

    2.2 If NO, Answer below

2.2.1.1 Do you know of other children that have received the millet bar?

2.2.1.2 What have you heard about the impact of the millet bar?

7.4 FORM 4: CONTROL VARIABLES KEY

1. Age:
   - Variable Name: `age`
   - Description: Age of the child in years (3-6 years).
2. Birth Weight:
   - Variable Name: `birthweight`
   - Description: Weight of the child at birth in kilograms (kg).
3. Gender:
   - Variable Name: `gender`
   - Description: Gender of the child (1 for Male, 0 for Female).
4. Height:
   - Variable Name: `height`
   - Description: Height of the child in centimeters (cm).
5. Weight:
   - Variable Name: `weight`
   - Description: Weight of the child in kilograms (kg).
6. Birth Order:
   - Variable Name: `birthorder`
   - Description: Birth order of the child.
7. Drinking Water Facility:
   - Variable Name: `drinkingwaterfacility`
   - Description: Availability of self-owned or public drinking water facility (1 for self-owned, 0 for public).
8. Household Headship:
   - Variable Name: `hhheadship`
   - Description: Type of household headship (1 for nuclear, 0 for non-nuclear).
9. Food at Centre:
   - Variable Name: `foodatcenter`
   - Description: Whether the child gets food at the center (1 for Yes, 0 for No).
10. Regular Attendance at NandGhar:**
    - Variable Name: `nandgharattendance`
    - Description: Regular attendance of the child at NandGhar (1 for Yes, 0 for No).
11. Monthly Expenditure on Food:
    - Variable Name: `monthlyfoodexpdt`
    - Description: Categorized monthly expenditure on food (Up to 1500, 1500 to 3000, 3000 to 4500, More than 6000).
12. Monthly Income:
    - Variable Name: `monthlyincome`
    - Description: Categorized monthly income (2500 to 5000, 5000 to 7500, 7500 to 10,000, More than 10,000).
13. Occupation of Father:
    - Variable Name: `fatheroccupation`
    - Description: Occupation status of the father (1 for working, 0 for not working).
14. Occupation of Mother:
    - Variable Name: `motheroccupation`

- Description: Occupation status of the mother (1 for working, 0 for not working).
15. Type of Food at Center:**
    - Variable Name: `centerfoodtype`
    - Description: Type of food provided at the center (1 for hot cooked, 0 for take-home rashan).
16. Type of House:
    - Variable Name: `housetype`
    - Description: Type of house (1 for pucca, 0 for kacha).
17. Type of Sanitation Facility:
    - Variable Name: `sanfactype`
    - Description: Type of sanitation facility (1 for self-owned, 0 for public).
18. Diarrhea Allergy:
    - Variable Name: `allergy`
    - Description: Presence of diarrhea allergy (1 for Yes, 0 for No).
19. Consuming Nutribar at Center:
    - Variable Name: `consumesnutribar`
    - Description: Whether the child consumes nutribar at the center (1 for Yes, 0 for No).
20. Type of Nutribar Consumed:
    - Variable Name: `nutribartype`
    - Description: Type of nutribar consumed.
21. Consumption of Millet and Milk Products:
    - Variable Name: `con_milletmilkprod`
    - Description: Whether the child consumes millet and milk products (1 for Yes, 0 for No).
22. Quantity of Milk Consumed:
    - Variable Name: `milkqty`
    - Description: Quantity of milk consumed (1 glass / 2 glasses).
23. Provided with Nutribar at Center:
    - Variable Name: `nutribargiven`
    - Description: Whether the child is provided with nutribar at the center (1 for Yes, 0 for No).
24. Mellets Consumed with Other Cereals:
    - Variable Name: `melletscereal`
    - Description: Whether mellets are consumed with other cereals (1 for Yes, 0 for No).
25. Child Liking the Product:**
    - Variable Name: `productlike`
    - Description: Whether the child likes the product (1 for Yes, 0 for No).
26. Profile of Index Child:
    - Variable Name: `vegnonveg`
    - Description: Profile of the index child (1 for Veg, 0 for Non-Veg).
27. Green Leafy Vegetables Consumed:
    - Variable Name: `vegfoods`
    - Description: Green leafy vegetables consumed.
28. Food Groups Consumed in a Day:
    - Variable Name: `consumfoodgroups`

- Description: Food groups consumed in a day.

29. Preference for Child Eating Millets:**
    - Variable Name: `pref_millets`
    - Description: Preference for the child eating millets (1 for Yes, 0 for No).