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The Study Team

DevInsights Private Limited

Introduction

Overview of literature

Hunger is a global, multidimensional and complex phenomenon that has been observed as a global concern, as reflected through the Sustainable Development Goal 2 (SDG) which is Zero Hunger. Hunger can basically be understood as the condition of distress caused due to the lack of food. One of the definition associated with the concept of hunger is of malnutrition, which translates into two conditions of undernutrition and over nutrition respectively, leading to insufficient, excessive or imbalanced consumption of nutrients. Largely, undernutrition is associated with malnutrition which signifies deficiencies in any or all of the given – energy, protein, or essential vitamins and minerals. Malnutrition is understood to be causing serious consequences for the health of the children, in particular the health of younger children.

The third sustainable development goal of “Good Health and Well-Being” in its manifold spectrum while targeting ensuring health and well-being at all ages includes the components of child mortality and maternal health. Poor nutrition continues to remain a critical global problem, wherein each year more children die due to undernutrition than the burden of tuberculosis, malaria and AIDS put together. Thus the health concern of malnutrition in its various manifestations is a global concern unmatched in scale. Looking at the critical and enormous health and economic consequences of this health problem, ending malnutrition by 2030 has been taken as an essential component of the Sustainable Development Goals.

Of the 17 SDGs, at least 12 include indicators that can be said to be highly relevant for nutrition, reflecting its central role in

The effects that are caused by the malnutrition as disastrous and pervasive that are understood to extend not just weakening immune systems and increasing risks of diseases but also causing the death of the affected individual¹. Driven due to poverty and inequality that exists in the society malnutrition also reduces the participation in education and employment and thus consequently to loss of productivity and the overall well-being of communities.

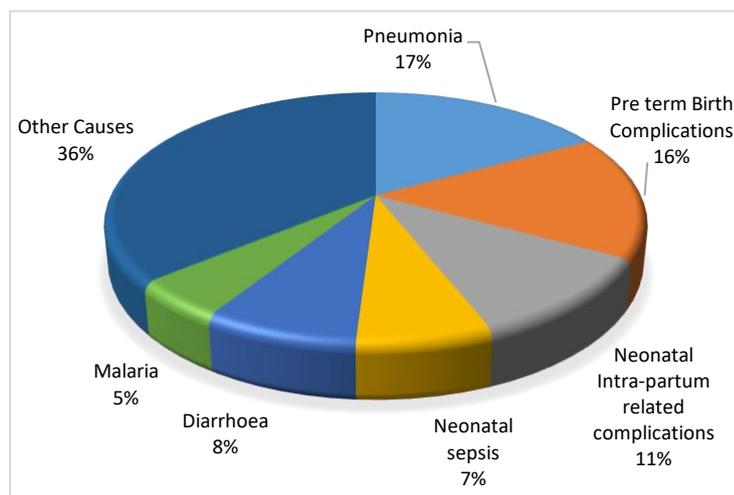


Figure 1: Cause of deaths of Under-5 children

Across the different sections of the population the section of younger children are affected the most due to undernutrition. More than any other cause of mortality, undernutrition is related to the deaths of the younger children. In the year 2015, 5.9 million children aged below 5 years died across the world. Of all of these deaths, while the leading causes were pneumonia, diarrhoea, malaria, birth asphyxia and preterm birth complications, the underlying contributing factor of almost 45% deaths was malnutrition. Dissecting the causes of death in children aged

under 5 years, a large proportion (about 45%) of deaths are accounted during the neonatal period (pre term birth complications, neonatal sepsis etc.), and postnatal period the leading causes are

¹ Available at <http://www1.wfp.org/nutrition>.

pneumonia, diarrhoea and malaria, whereby these main killers account for 64% causes of deaths of children under 5².

These illnesses are associated with malnutrition which is the underlying contributing factor in all child deaths. The children affected with these diseases are more prone to malnutrition due to the loss of appetite and sickness and conversely, those who are malnourished have a higher vulnerability to these diseases, creating a cycle of malnutrition and illness³. Undernutrition, the wider problematic aspect of malnutrition can be understood to be manifested in the forms of stunting (low height for the age reflecting chronic undernutrition), wasting (low weight for the age, reflecting acute undernutrition) and micronutrient deficiencies.

The children who are undernourished and survive early childhood are likely to be stunted and thus not able to reach their full physical and mental potential. Literature suggests that the one thousand day period from the time of conception to the completion of two years of a child's life are a crucial period of opportunity wherein the damage (largely irreversible) done by early childhood nutrition can be prevented⁴. It is not just the children who are the critical entities in this framework, but also the pregnant women and nursing mothers. These women (pregnant women and nursing mothers) have special nutritional needs and the mothers who are malnourished are likely to give birth to children who are malnourished, thereby creating an intergenerational cycle of undernutrition⁵.

India with one of the largest child development program in the world has been contributing to around one-third of the malnourished children in the world. Malnutrition is undoubtedly one of the biggest public health problems in India. While the global figures indicated the Under-5 Mortality Rate (deaths per 1000 live births) to have come from 91 in 1990 to the figure of 43 in the year 2015, in terms of the rate for India, the figure in 2015 of 48 from 126 in 1990⁶. There has been a 3.9% annual rate of reduction for the country⁷. The data of malnutrition in India, as of 2013-2014 reflects wasting at 15.1%, stunting at 38.7 and underweight children at 29.4 % which add up to a serious concern to be addressed in India. On a whole, out of those 45% deaths due to malnutrition, as per UNICEF, 1 million children aged below 5 years die due to malnutrition related causes every year in India.

² UN Inter-agency Group for Child Mortality Estimation. *Levels and trends in Child Mortality: Report 2015*. UNICEF, New York; 2015.

³ Keene, B. *WASH, Food Security and Environment : Making the Links*. Care E-Publication. 2012.

⁴ Available at <http://www1.wfp.org/nutrition>.

⁵ Ibid.

⁶ UN Inter-agency Group for Child Mortality Estimation. *Levels and trends in Child Mortality: Report 2015*. UNICEF, New York; 2015.

⁷ Ibid.

Brief Overview of Project districts

The state of Madhya Pradesh is the second largest state in India, bordering the states of Uttar Pradesh, Chhattisgarh, Maharashtra, Gujarat and Rajasthan, making it a landlocked state. The state has a population of 7, 26, 26,809, of which male and female are 37,612,306 and 35,014,513 respectively⁸. The state has a child sex ratio of 918 and literacy rate of 69.32% which is below the national rate⁹. Madhya Pradesh is a part of the Empowered Action Group (EAG), a group of states that was set-up of eight states identified as having high fertility rates and low-socio economic indicators. As per the latest data for the state, the under-five mortality rate (U5MR) is 52 and the infant mortality rate is 44¹⁰. Data in context of nutritional status of children reflects that the children under 5 years who are underweight are 36.5% and children under 5 years who are stunted are 37.5% and who are wasted are 22%¹¹. Moreover the data from 2015 reveals that Madhya Pradesh accounts for the highest number of malnourished children within the country.

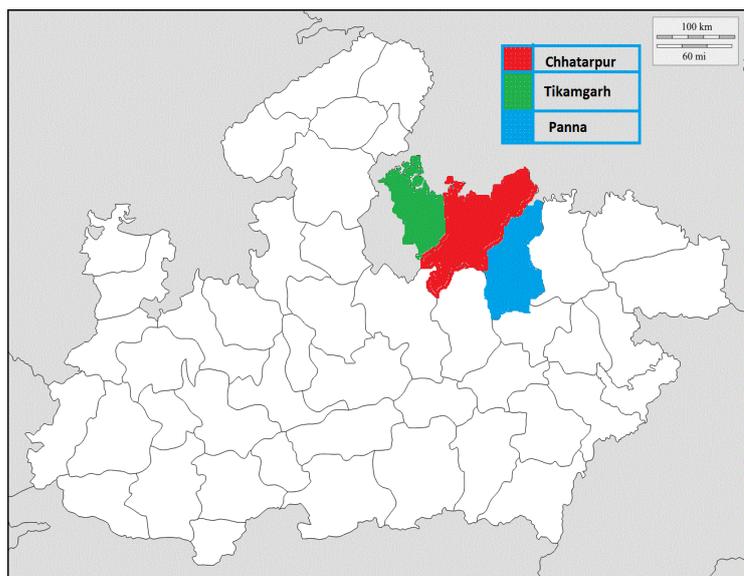


Figure 2: Map of Madhya Pradesh - with project districts highlighted

There are 51 districts in the state of Madhya Pradesh, among which are the project districts of Chhatarpur, Panna and Tikamgarh which are counted amongst the most backward districts in the country, and thus receiving funds under the Backward Regions Grant Fund Programme (BGRF).

Chhatarpur district is bounded by Uttar Pradesh, and the other districts of Panna, Damoh, Sagar and Tikamgarh. It is a part of the Sagar division. The district lies in the sub basin of the Ganga basin and is traversed by the tributaries of Ken and Dhasen. It is divided into 6 sub-divisions, 11 tehsils, 15 urban bodies and 558 Gram Panchayats. Within the region, bundeli is the main language spoken along with Hindi¹².

The district has a total population of 17, 62,857, and consists of 1187 villages and 16 towns¹³. Within this population the male population at 93, 59, 06 accounts for 53% of the population and the female population at 47% of the population consists of 82, 69, 51 females. In the district the greater proportion of population of 77% is rural population and the rest 23% is urban population. The child population (0-6 years) for the district is 2, 79,317 accounting for 15.84% of the total population¹⁴. Recent reports of the National Family Health Survey-4 in the context of nutritional status of children have provided that the children under 5 years who are stunted 44.4%, who are wasted are 17.8% and those who are underweight in Chhatarpur are 41.2%¹⁵.

⁸ Census of India, 2011.

⁹ Ibid.

¹⁰ International Institute for Population Sciences. National Family Health Survey-4. State Fact Sheet Madhya Pradesh, 2015-2016. Mumbai.2016

¹¹ Ibid.

¹² Available at <http://www.chhatarpur.nic.in/indexe.html>

¹³ Available at <http://chhatarpur.nic.in/Upload/DistProfile.pdf>.

¹⁴ Ibid.

¹⁵ International Institute for Population Sciences. National Family Health Survey-4. District Fact Sheet Chhatarpur Madhya Pradesh, 2015-2016. Mumbai.2016

Panna district is located in the north-eastern part of the state and comes under the Sagar revenue division. The district was carved out from the erstwhile states of Panna, Ajaigarh, Nagod and Maihar. It is irregular in shape and has a narrow strip in the north towards Ajaigarh and a broader base in the Pawai tehsil. The headquarter of revenue division is Panna and is divided into eight tehsils, five community development blocks and has a total of 1011 villages with 395 gram panchayats¹⁶. The mainstay of the economy of the district is agriculture.

The district has a total population of 1,016,520 with the population of children (0-6) of 163,620 reaching to almost 17% of the total population¹⁷. It has a sex ratio of 907 and literacy rate of the district is 64.8% and the female literacy rate is 54.4%. With regards to the data for nutritional status of children in the district, children under 5 years who are stunted are 43.1%, who are wasted are 24.7% and those who are underweight reach 43.3%¹⁸.

Located in the northern part of Madhya Pradesh, the **district of Tikamgarh** is bounded by the districts of Chhatarpur (Madhya Pradesh) on the east and Lalitpur (Uttar Pradesh) on the west and Jhansi (Uttar Pradesh) on the north¹⁹. It lies on the Bundelkhand plateau between the Jamni which is a tributary of Betwa and Dhasan rivers. Forming the north western part of the Sagar revenue division, the district is divided in three sub-divisions and 9 tehsils with 963 villages and 459 Gram Panchayats. The sex ratio of the district is 901 and literacy rate is 61.43%²⁰.

The district of Tikamgarh has a total population of 1,445,166 wherein the child population (0-6yrs) is 227,564 forming around 16% of the total population²¹. Within this population, in the context of malnutrition, the children under 5 years who are stunted are 50%, wasted are 19.4% and who are underweight are 43.1%²².

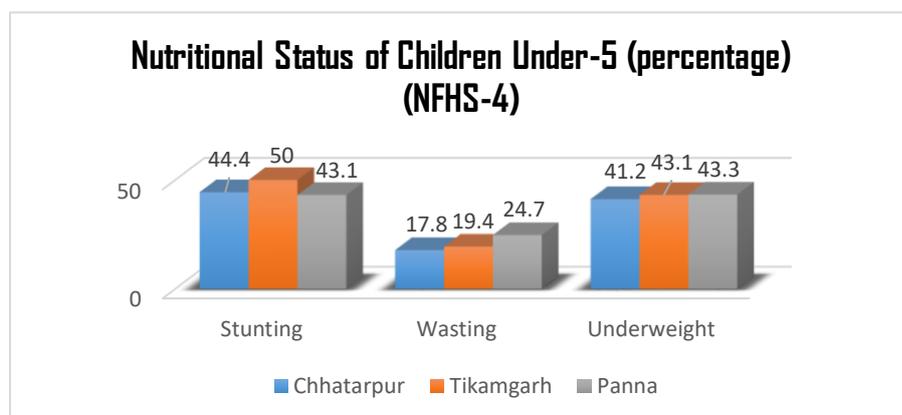


Figure 3: Nutritional Status of Under-5 Children in Project Districts

¹⁶ Directorate of Census Operations, Madhya Pradesh (2011). *District Census Handbook Panna*. Census of India, 2011.

¹⁷ Ibid.

¹⁸ International Institute for Population Sciences. National Family Health Survey-4. District Fact Sheet Panna Madhya Pradesh, 2015-2016. Mumbai.2016

¹⁹ Available at <http://www.tikamgarh.nic.in/general.htm>.

²⁰ Directorate of Census Operations, Madhya Pradesh (2011). *District Census Handbook Tikamgarh*. Census of India, 2011.

²¹ Ibid.

²² International Institute for Population Sciences. National Family Health Survey-4. District Fact Sheet Tikamgarh Madhya Pradesh, 2015-2016. Mumbai.2016

About the Project

The Madhya Pradesh Nutrition Project (MPNP) was a project being implemented by CARE India with funds from Cargill, addressing malnutrition in three districts of Chattarpur, Tikamgarh and Panna in the Bundelkhand region of the state of Madhya Pradesh. The project was aimed towards achieving reduction in underweight (severe underweight) and under-nutrition among children and creating awareness on issues associated with malnutrition. It also aimed to strengthen governance, accountability and mutual responsibility of service providers and communities. As the project was an opportunity to provide long term support to the state government's Integrated Child Development Scheme (ICDS) which was attempting to harness human, institutional and financial resources with high quality and with an increase precision and efficiency.

Project Objectives

- Reduction in underweight & under-nutrition among children
- Reduction in severe underweight among children
- Creating community awareness about malnutrition issues
- Strengthen governance, accountability, & mutual responsibility of service providers and communities

In the project, the intervention started in February 2014 through the direct involvement of Nutrition Volunteers in 80 villages, which are thus known as early demonstration villages. The project was then scaled up in September 2015 to 220 village more, putting the demonstration villages to 300 villages. Along with this, the project is also working with multitudes of members of the communities, such as the cluster coordinator, block coordinator, or indirectly through the functionaries of ICDS like the Anganwadi Workers (AWW). While these were the aspects directly involved in addressing malnutrition, the project had another aspect of working on gender issues through the component of Gender Transformative Change (GTC) that was carried out in 16 villages in the three project districts. This component included activities that were carried out to influence the workload distribution, food distribution, improved spousal communication and on women's and child health needs. Within the project the aim was to create an enabling policy environment for ICDS, document models and promote convergence. It was also facilitating training and capacity building of the government functionaries, promoting safe drinking water, hygiene and sanitation at the level of households and community, undertaking community mobilization and participatory governance.

The project had been working towards the achievement of the targets through multi-dimensional approach that consisted of the exercises of capacity building, hand holding support, creation and enabling environment and community awareness regarding issues of malnutrition, demand creation for service delivery and identification of gaps and strengthening the system of service delivery, behaviour change communication methods and gender transformative change.

The MPNP project culminated in the month of April, 2017 and an end line assessment was proposed as per the organisation policy to assess the improvements in nutrition outcomes specific to moderate and severe underweight issue among children below the age of 5 years in comparison to the indirect intervention and control areas.

Conceptual framework and overview of the study design

Conceptual framework of the study

The present study was carried out as an exercise to assess the impact of the intervention undertaken as part of the Madhya Pradesh Nutrition Project. Within this assessment the samples were covered across the study locations of the districts of Chhatarpur, Tikamgarh and Panna in the Bundelkhand region of the state of Madhya Pradesh. The sample covered was of 1857 women across the three arms of direct intervention, indirect intervention and comparison.

The overall **objectives** of the study were –

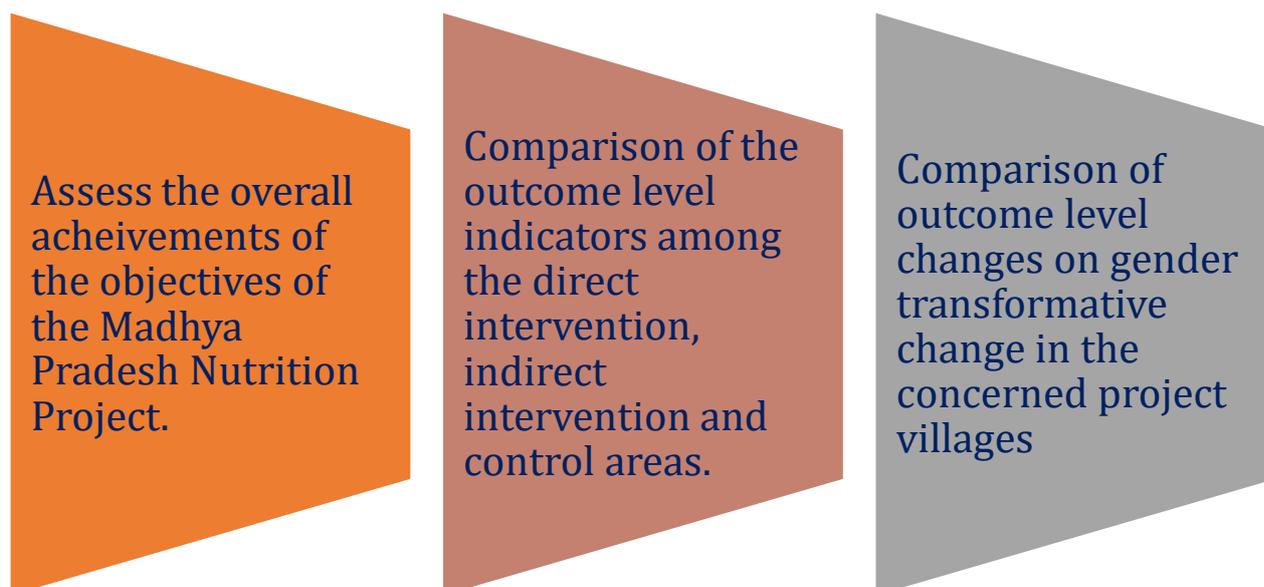


Figure 4 - Objectives of the End line Study

The Madhya Pradesh Nutrition Project was undertaken to address the issue of malnutrition in the three project districts. In the absence of a usable baseline report the project used National Institute of Nutrition data from 2010 that was available for each of the districts. Based on this report the project targeted to reduce the moderately and severely underweight prevalence in the areas covered under the project.

Based on this premise the present study was primarily designed as a mixed method quasi-experimental post-test only design with non-equivalent groups, in which a comparison group was chosen from matching areas in the project districts wherein the MPNP has not been introduced. For designing this evaluation the following hypothesis was utilised –

- Nutrition outcome specific to moderately and severely underweight among 0-5 years' children significantly improved in direct project intervention villages compared to indirect and control villages against baseline figures.
- The improvement in overall project universe (direct and indirect intervention) is higher compared to control villages measured against the committed target.

The study was primarily designed as integrally linked to the sampling strategy that was utilised for the purpose of the data collection. Within this three arms of direct intervention, indirect intervention and

comparison were taken in the three project districts. The comparison arm had clusters/villages from the same districts that were matching in population characteristics to the clusters/villages chosen for the direct and indirect intervention arms.

Detailed methodology

Within this study design, we followed a mixed methods approach, consisting a mix of the primary and secondary research components. The Mixed methods design essentially utilised both quantitative and qualitative techniques towards a comprehensive assessment, married with a thorough review of the secondary data and existing literatures pertaining to the assessment. The introduction of quantitative and qualitative tools provided a robust design that looked at holistic assessment of the intervention, across different groups of the population. The quantitative tools provided values to key efficiency and effectiveness indicators, whereas the qualitative tools helped to answer the “whys” and the “hows”²³.

Within the primary research component, while applying the mixed-method approach, as proposed both quantitative and qualitative tools were brought in to ensure that the information leading towards the fulfilment of research objectives was effectively captured. Essentially these involved structured interview schedules (survey questionnaires) including status of child sheet (regarding underweight data), in-depth personal interviews, focus group discussions capturing the nutrition component of the project and dyad interviews with married couples within the GTC component in order to effectively capture data. The component of secondary research was focussed on the review of the literature addressing the themes of malnutrition and gender in context of malnutrition, in the project areas (the issues and data surrounding it), and review of the NIN 2010 Reports for the project and control areas that had been utilised in lieu of the baseline.

The multiples sources of collection of data mired through the quantitative and qualitative approaches were proposed to lead to the triangulation of the data to bring forth a holistic understanding and comprehension of the objectives as specified in the context of the study.

Sample Design and Strategy

Sample Size

Household survey for MPNP (Quantitative) –On the basis of an observed underweight rate of children under 5 of 49.44%²⁴ [Average of Chattarpur (48.3%), Tikamgarh (49.7%) and Panna (50.3%)] percent at baseline, a sample size of 600 HHs per arm with a total of 20 households in each cluster was estimated to provide 80 percent power to detect a 20 percent change in the rate of U5 underweight in the intervention group compared with the comparison at 5 percent level of significance.

Along with these household surveys (structured interview schedules) the weight measurements of the focal child of each interview were also noted down.

Stakeholder’s survey for MPNP (Qualitative)

Within the nutrition intervention, in addition to the structured interview schedules at the household (under-5 children) level, Anganwadi Workers (AWWs) and Nutrition Volunteers (NVs) from each of the program districts and comparison areas were also randomly selected to be interviewed through in-depth interview tools. Focus group discussions with Anganwadi Workers, Nutrition Volunteers, SHG

²³Bamberger, M (2012). *Introduction to Mixed Methods in Impact Evaluation*. InterAction and the Rockefeller Foundation. Washington, D.C.

²⁴ NIN report 2010

members and VHSNC members were included within the sample to be included within the qualitative evaluation from the program districts.

Sample for GTC

Within the sample frame a purposive sampling of 16 villages was made to collect qualitative and quantitative data related to gender transformative change interventions. Within the intervention on Gender Transformative Change, dyad interviews with married couples and focus group discussions with the mothers were also be conducted within these GTC villages.

Preparatory Phase

The processes involved in the preparatory stage are detailed in the given sections:

Desk Review -

A quick review of the existing literature and program documents was undertaken to prepare briefs for the project team in order to bring all team members at one level of understanding. In addition to the documents of the Madhya Pradesh Nutrition Project, reports pertaining to governmental initiatives and schemes in the context of nutrition were also reviewed. This contributed towards the understanding of the intervention and the development of the tools.

Development of tools –

Preparation – This step consisted of the preparation of the tools that were utilized in data collection, which were the questionnaires (structured interview) for the household surveys, the in-depth interviews, focus group discussion guides and for the dyad interviews (Refer to Annexures).

Finalization of tools – The tools were developed ensuring the inclusion of relevant indicators, in consultation with the proposed team were shared with CARE, India team. Following the feedbacks and review with the teams, the tools were finalised and put through for translation process.

Translation of tools into vernacular language – Before pre-testing the tools were first translated in the regional language (i.e. Hindi). Translation was done focusing on all key aspects: semantic equivalence, conceptual equivalence, and normative equivalence of items.

Translation of the tools was done by the professional translators having experience in translating the social survey tools.

Pre-Testing

The research instruments developed for the study were thoroughly tested in order to ascertain their suitability in actual field conditions. Research staff (Co-PI) with the support of field coordinator carried out the pre-testing exercise in Prathvipur Block of Tikamgarh District. The pretesting was conducted in Mohanpura and Chandrapur villages in approximately 10-12 households.

Pre-testing is considered a quintessential step in survey research. It is not only critical for identifying questionnaire problems but it also helps in removing ambiguities and other sources of bias and error. Based on the experiences from the piloting, the research instruments were revised and finalized before the launch of the field work.

The inception report outlining the details of tools, desk review and sampling methodology was also shared for the feedback and suggestions.

Recruitment and training of field team members

Core team: The study was led and mentored by the expert group comprising of the principal investigator with the requisite experience, a statistics specialist and a monitoring and evaluation specialist providing a solid base and framework for the assessment which provided immensely robust results for the study. In addition the co-principal investigator was engaged based on the requisite qualifications and needs of the study, to bring in efficiency and experience to the whole process. The co-principal investigator was assisted by the data manager and field coordinators.

Field Team

The field work was inclusive of main survey exercise and qualitative exercise. Thus we selected 10 teams comprising of 2 field investigators with 1 supervisor in each team, to bring the overall field team to consist of 10 supervisors and 20 field investigators. Along with these, there were research associates engaged who were responsible for the conduction of qualitative techniques, including focus group discussions, and dyad interviews. The field coordinators (in-house from DevInsights) were responsible for the overall management of data collection process.

The survey team was recruited based on the educational qualifications and experience in conducting similar surveys. Keeping in mind the nature of study, the team comprised of female and male field team members and male supervisors. Generally, to cater to the drop outs and weaning of inferior quality members, around 20-30% more team members were also recruited so that at the end of training we had sufficient number of team members to conduct the survey.

Training

Two days of intensive and rigorous training of the forty field team members including field investigators, supervisors and coordinators was conducted at Hotel Jain Palace, Chhatarpur on 21st and 22nd March, 2017. The training was conducted with the support of CARE, India officials and MLE Expert and Co-Principal Investigator. The field team were oriented to the objectives and implementation of the project issues, and all other aspects of the research design, the rationale and use of each of the instruments. They were trained on the critical aspects of collecting quality data, observations techniques, how to verify and scrutinize the data. The training was jointly conducted by the CARE officials and DevInsights officials. Training broadly contained the following:

1. First day included training of the enumerators and supervisors on the household survey tool through lectures, power point presentations, and some demonstrations. They were briefed about the Madhya Pradesh Nutrition Project, including the nutrition and gender transformative change component. Along with the intervention details, the teams were also oriented to the concepts and basic issues associated with the project in context of nutrition and health of women and children below 5 years of age.
2. The second day first half of the day the teams conducted mock practice sessions of the household survey tool so as to familiarize them with the tool in conversational context. Simultaneously the research associates were provided training on conduction of FGDs and dyad interviews. Following this the second half included field practice of the questionnaires. The field practice was followed by a debriefing session that was spent in clarifying doubts and explaining issues. Supervisors were also trained for using the CS Pro application for concurrent data entry and conduction of Key Informant Interviews. At the end of the training the field team was fully versed with overall objective of the project, use of tools, Do's and Don'ts, guidelines, protocols, and reporting structure.

Data Collection

The data collection process was based on the premise of the sample design, the field strategy and accordingly was conducted keeping in mind the sample frame. The terms of the project dictated for a quantitative data collection from the target respondents and the process also entailed qualitative data collection through the means of focus group discussions, and in-depth interviews.

Data collection and field work is considered as the back-bone for any project carried out by our organisation. Robust data quality monitoring system was employed in order to have data of best quality and was handled with zero tolerance. Strict protocols were maintained right from the stage of field team recruitment to data submission.

The data collection process was managed by the field coordinators under assistance of co-principal investigator. The field team consisting of supervisors and field investigator were involved in listing households. Following the initiation of listing, concurrently Pen and Paper Interviewing (PAPI) method were used for data collection by the team. A central data processing team, comprising of data managers were providing regular feedback to the core team, which further assisted the data collection team in quality maintenance.

After the training of the teams was concluded the teams of the investigators and supervisors were made and were allotted the respective villages starting from the district of Chhatarpur. Following this the data collection process started from Rajnagar Block of Chhatarpur District wherein each team consisting of three members (one supervisor and two investigators) was covering one village in a day. Following the villages of Rajnagar block the data collection process was moved to Nowgong block and then accordingly Chhatarpur district was completed. Post the completion of the villages selected in Chhatarpur district, the teams were moved to Tikamgarh district and data collection process was initiated for Tikamgarh district. After the completion of field work in Tikamgarh district, the field work was initiated in Panna district and was completed there. Status Implementation Report detailing out the shows the status of the data collection process had been shared with the CARE, India team

Mixed Method Approach

The impact study was primarily designed as a mixed method quasi-experimental post-test only design with non-equivalent groups, in which a comparison group was chosen from matched areas in the three districts where the MPNP activities were not introduced. The Mixed methods design essentially utilised both quantitative and qualitative techniques towards a comprehensive assessment, married with a thorough review of the secondary data and existing literatures pertaining to the assessment.

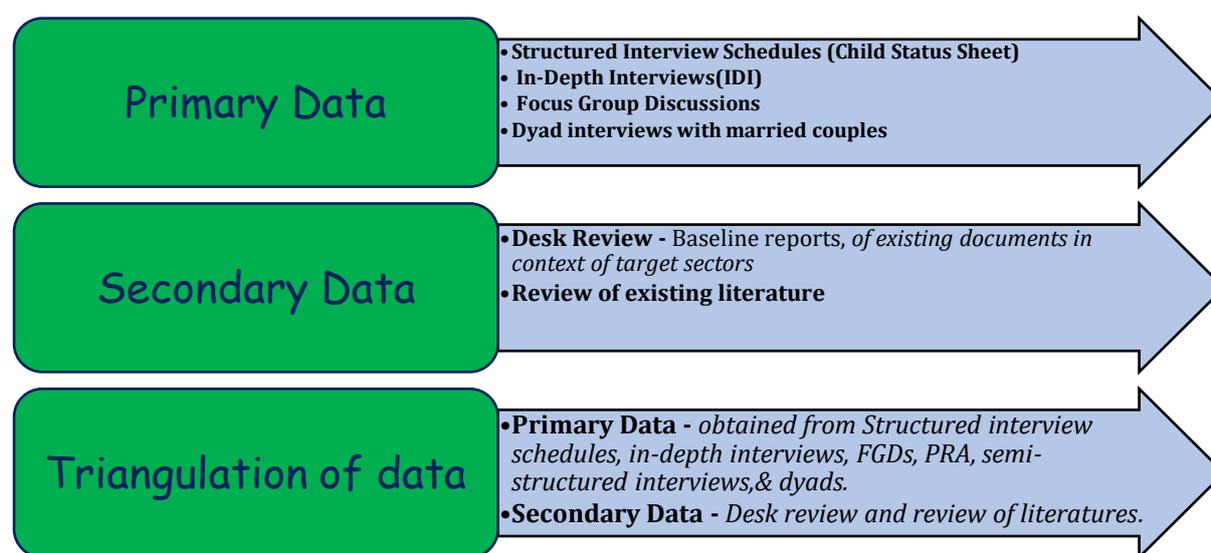


Figure 5 - Triangulation of Data

Thus overall the study was conducted in three districts of the state of Madhya Pradesh, namely, Chhatarpur, Tikamgarh, Panna, wherein the MPNP activities had been undertaken. The clusters (villages) that were taken for the study were divided into three arms across the three districts; Direct Intervention Arm, Indirect Intervention Arm, Comparison Arm. Across the three districts, 9 blocks were selected for evaluation through random selection method, wherein 4 blocks from Chhatarpur, blocks from Tikamgarh and 2 blocks from Panna. In these blocks, the blocks wherein the Gender Transformative Change (GTC) component had been introduced were purposely selected for the assessment. Further, within each arm of direct intervention, indirect intervention and comparison, 30 clusters were selected through probability proportional to size (PPS) sampling method. The lists of selected villages has been annexed (See Annexures). Further at the village level, list of eligible households with currently 0-5 year old children formed the universe. A sampling frame was devised from the lists obtained from Anganwadi Workers (AWWs) and from within this sampling frame 20 Households were selected through systematic random sampling method. From each arm 600 households were covered from the three districts. Therefore, overall 1800 households were covered under the entire study.

The data thus collected by the field team was analysed as per the analysis plan finalised with feedbacks from CARE team, along the lines of key indicators as per the requirements of the study. The data entry was done through data entry package (CS Pro) and tables generated through the required software (SPSS or STATA). In the present study, keeping in mind the research design, a counterfactual analysis with DID (explained above) was conducted along the objectives of the study. Standardised measures and indexing techniques were utilised for the analysis of data collected through qualitative technique.

Quantitative analysis

Anthropometric indices were calculated using reference medians recommended by the World Health Organization (WHO) and classified according to standard deviation units (z-scores), based on the WHO criteria ²⁵. Weight-for-age z-score (WAZ) is essentially a composite of weight-for-height and height-for-age, thus a measure of both acute and chronic malnutrition. A WAZ of <-2 is used for defining a child as underweight. A z-score of <-3 defines severe levels of all health indices. The Anthro software of WHO was used for analyzing the nutritional status of children, and all other analyses were done using the SPSS (version 23). The data was internally standardized and growth centiles were assessed within in the given population unit without comparison from external units. The figures received were compared to those documented by WHO Anthro; with the objective of establishing of validation of current cut-offs and their applicability in the present community. The chi-square test were used for assessing the significance of nutritional indices and various independent variables of interest and multi-level modeling through regression revealed the predictors of undernutrition. To measure the impact of current intervention on children, the results from this survey were compared with the results of a similar nutritional survey conducted in the same area in by national census, which was the National Institute of Nutrition (NIN) reports of 2010.

Qualitative analysis

The analysis of the data obtained from the In-depth interviews, dyad interviews and FGDs involved undertaking a systematic content analysis. *Data triangulation* and the field team's approaches were undertaken to enhance validity of the findings. Firstly, all the notes were read to identify and list the codes from a selection of interviews. These were then independently coded by another researcher and the differences, if any, were reconciled to develop a final list of codes that was utilised for all the open ended responses in each category. The listed codes were subsequently collapsed into thematic groups, and the linkages between these groups were identified by reading and rereading the interviews to identify the possible linkages.

Triangulation Approach

An important aspect of the study process was to carry out proper triangulation of all the relevant information in the analysis to result in desired findings. Triangulation of data is a technique wherein more than one data source and/or more than one method of data collection are used. Here we look at the patterns of convergence to either further develop or confirm an overall interpretation. This technique assumes that any weakness in one method is compensated by strengths in another. Thus, by using more than one data collection method, triangulation was undertaken to address the issue of internal validity.

²⁵ WHO (2006). Child growth standards: length/height for age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age, methods and development, World Health Organization.

Key Findings

Brief Profile of the Respondents

The profiling of the beneficiaries of the project is a salient task that helps to study the sample population in terms of their existing socio-economic status. This helps us to locate the study population that were chosen due to the virtue of the being the beneficiaries (in direct and indirect intervention areas). This profiling provides us a glimpse into the target group for whom the results follow and the future interventions, if any, can be accordingly planned. This section presents findings related to the profile and on the indicators across the three arms.

Age –

Within the overall sample covered the respondents were mothers of children below the age of 5 years, wherein the women belonged to the age groups of 18 – 51 years, wherein the median age of the respondents was 25 years.

Within this around half the respondents (47%) belonged to age group of 22-25 years, followed by 35% of the respondents within the age group of 26-35 years, 17% of the respondents belonged to the age group of 18-21 years and around 2% reported their ages to be above 35 years.

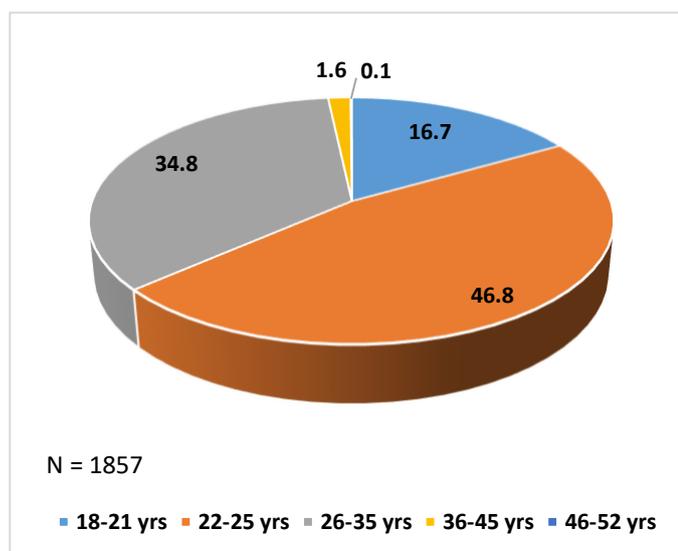


Figure 6 - Distribution of Age of Respondents (Percentage)

Social group –

Across the three project districts the trend depicted that the larger proportion of the respondents belonged to the Other Backward Caste (OBC) category. Around half of the respondents within the entire sample reported to belong to the category of OBC followed by the category of Scheduled Caste which was reported by 24% of the respondents across the entire sample.

This trend was similarly depicted across the three arms of direct intervention (58%), indirect intervention (44%) and comparison arm (52%) for the category of respondents reported to belong to the category of Other Backward Caste (OBC). In the direct intervention 22%, in the indirect intervention 23% and in comparison arm 27% of the respondents reported to belong to the category of Scheduled Caste.

	Direct Project	Indirect Project	Comparison	Overall
Scheduled Caste	22.3%	23.5%	26.9%	24.2%
Scheduled Tribe	5.6%	12.3%	8.0%	8.6%
Other Backward Caste	57.9%	43.6%	51.6%	51.2%
General	13.6%	18.6%	12.1%	14.8%
Other (Specify)	0.6%	2.0%	1.5%	1.3%

Table 1 - Social Group (Percentage)

Type of family –

The entire sample was covered across the rural setup within the three project districts wherein expectedly the trend of joint family still remains in sizeable proportion. This was depicted across the results of the study within the sample wherein more than half (56%) of the respondents reported to belong to joint family setups. Around one-third (36%), reported to belong to a nuclear setup. A small proportion (8%) of the respondents across the entire sample reported to belong to the extended family setup.

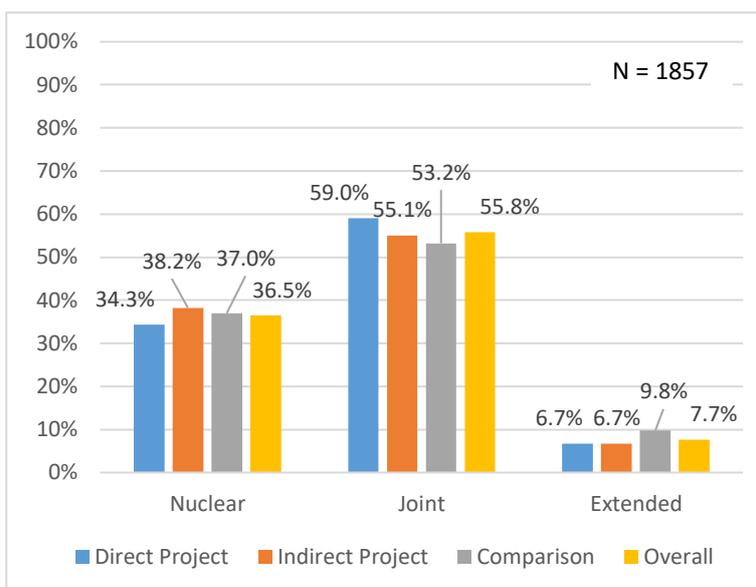


Figure 7 - Type of Family (Percentage)

Similar trend was observed when looked at separately for each study arm. Within the direct intervention areas the highest proportion (59%) was reported for the joint family setup and similarly across the indirect intervention (55%) and comparison (53%) areas also the highest proportion of respondents reported to belong to the joint family.

Economic status of family –

The economic status of the family of the respondents within the present study was categorised based on the ration cards of the family that the respondents reported about. The ration cards are divided across the three categories of Above Poverty Line (APL), Below Poverty Line (BPL) and Antyodaya Anna Yojana (AAY) which are categorised as per the provision of subsidised food to the families.

Within the entire sample covered, the highest proportion at 37% of respondents was reported of belonging to the category of BPL, followed by 26% of the respondents belonging to the APL category. Also it came out that a sizeable proportion (20%) of the respondents reported to not be aware of the ration card of their family which could be a reflection of the position of the women within their families.

	Direct	Indirect	Comparison	Overall
APL	30.8%	20.3%	28.2%	26.5%
BPL	34.1%	41.7%	35.7%	37.1%
AAY	1.2%	1.0%	1.3%	1.2%
Other	10.0%	19.1%	15.8%	14.9%
Don't Know	23.8%	18.0%	19.1%	20.4%

Table 2 - Economic status of HH (Percentage)

This could also be attributed to the lack of access to education that has been depicted by the majority of the respondents not having completed schooling. These indicators further cement their status and position within their families within the context of overarching patriarchal and gendered framework of society at large.

Education –

The education system in India existing with the patriarchal framework of the society was such that the women were educated to the lower grades and not beyond because of the traditional mandates. The location of educational institutions in the rural setup further dictated that the girls could only finish education in the primary schools which were located within their villages and not to secondary schools which were located farther. While these issues and concerns have started to be addressed in the present times there are still miles to go.

The largest proportion of respondents at 27% reported to have completed education within the grades of 6th-8th and 17% reported to have completed between the classes 1st – 5th. Also 20% of the respondents reported themselves to be illiterate. Thus overall around 72% of the women had reported to have completed education till the level of grade 8th (including women reported to be illiterate). 16% of the respondents reported to have completed schooling between the grades 9th - 10th. At the senior secondary level, 7% of the respondent reported to have attended school till between the classes 11th-12th. Within the entire sample, only 5% of the respondents reported their level of education in the category of “Graduate and above”.

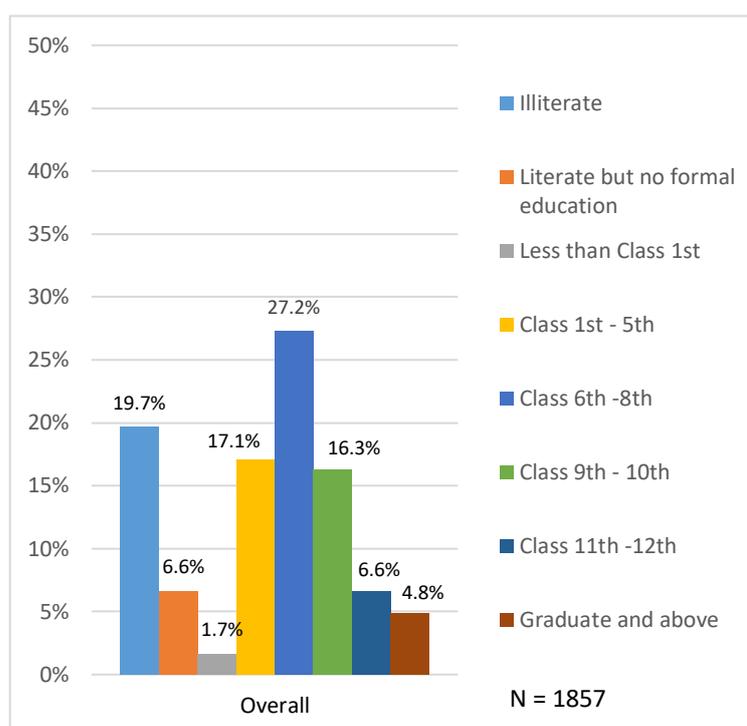


Figure 8- Educational status (Percentage)

Profile –

- ✓ Majority of the respondents were reported to be aged between 22-25 years and the average age across the entire sample was 25 years.
- ✓ The category of Other Backward Caste (OBC) was reported by around half of the respondents followed by the category of Scheduled Caste being reported by the second highest proportion of respondents (24%).
- ✓ Within the entire sample covered under the study more than half of the respondents reported to belong to joint family setups.
- ✓ Sizeable proportion (37%) reported to belong to the category of BPL families, as indicated by their ration cards.
- ✓ Overall around 72% of the women had reported to have completed education till the level of grade 8th (including those reported illiterate). The largest proportion of respondents at 27% reported to have completed education within the grades of 6th-8th and 17% reported to have completed between the classes 1st – 5th. Also 20% of the respondents reported themselves to be illiterate.

Overall achievements of the objectives of the MPNP

The Madhya Pradesh Nutrition Project was initiated by CARE, India with the overall objective of addressing the concern of malnutrition across the three districts of Chhatarpur, Tikamgarh and Panna in the state of Madhya Pradesh. In addressing malnutrition the severity of incidence of under-nutrition and underweight amongst the children is measured so as to indicate the nutritional status of the children. The results of the present study reflected on the impact of the intervention that was undertaken as part of the Madhya Pradesh Nutrition Project.

- ✓ Reduction of the underweight and under nutrition among the children in the project
- ✓ Reduction of severe underweight children
- ✓ Awareness within the community around the issue of malnutrition

Under-nutrition as a public health concern has affected women (mothers) and young children the most, making them the vulnerable groups in this context. In the Madhya Pradesh Nutrition Project, in the absence of baseline data, the data presented for the project districts (Chhatarpur, Tikamgarh, & Panna) by National Institute of Nutrition (NIN) was used. The data from NIN 2010 was used for the purpose of comparison. This data was available for the three districts separately and based on this the project sought to aim towards reduction in the prevalence of moderately underweight and severely underweight children in these areas. The target taken was reduction of 20% in the moderately underweight and 30% in the severely underweight prevalence in the project areas.

The NIN study carried out in 2010 was a cross sectional study that covered the three project districts separately.

As per the NIN findings, for the district of Chhatarpur, the overall prevalence of under-nutrition for underweight was 48% (<Median-2SD WHO New Child growth standards) and of severe underweight was reported at 18% (<Median-3SD WHO New Child growth standards). For the district of Tikamgarh, the data presented the overall prevalence of under-nutrition for underweight was 50% (<Median-2SD WHO New Child growth standards) and 19% were of severe underweight (<Median-3SD). The data reported for the district of Panna indicated that overall prevalence of underweight was 50% (<Median-2SD WHO New Child growth standards) and 19% were of severe underweight (<Median-3SD). The average data for the three districts would be 49% prevalence of underweight (<Median-2SD) and 19% in the prevalence of severely underweight (<Median-3SD).

District	% < -3SD	% < -2SD	Normal
Chattarpur	18.3	48.3	51.7
Tikamgarh	19.3	49.7	50.3
Panna	19	50.3	49.7
Average (3 dists.)	18.9	49.4	50.6

Table 3 - NIN (2010) Data - Project Districts

MPNP End line	% < -3SD	% < -2SD	Normal
Direct	10.2	29.7	70.3
Indirect	13.8	34.3	65.7
Comparison	16.3	42.9	57.1

Table 4 - MPNP End line data - Project Districts

The present study collected the data from the intervention districts of Chhatarpur, Tikamgarh and Panna. The data collected in the end line assessment showed a significant reduction in the data collected for underweight and severe underweight prevalence in the children in comparison to the NIN data. While there was reduction in prevalence, the most significant change could be seen in

the direct intervention areas when seen against the indirect intervention and comparison areas. The data showed that in the direct intervention areas the prevalence of underweight was 30% (<Median-2SD) and severe underweight was 10% (<Median-3SD). For the indirect intervention areas the prevalence of underweight was reported to be 34% (<Median-2SD) and of severe underweight was 14% (<Median-3SD). The least reduction was reported from the comparison areas where the prevalence of underweight was 43% (<Median-2SD) and the prevalence for severe underweight was 16% (<Median-3SD).

The goal of 30% reduction in the prevalence of severely underweight in the context of the NIN data with average of 19% would put the target at 13% prevalence. The prevalence of underweight was aimed towards 20% reduction putting the target at 39%.

The data described above reported from the end line would indicate towards achievement of the goals within the direct intervention areas and even significant improvement in the indirect intervention in comparison to the comparison areas wherein the project activities were not undertaken.

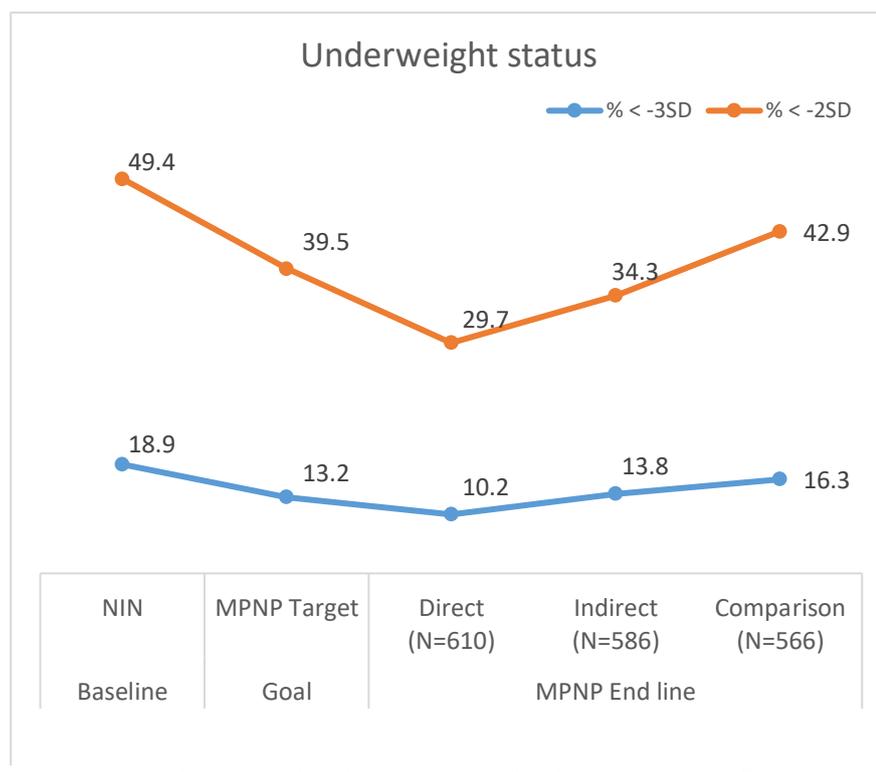


Figure 9 - Underweight Status - NIN baseline data and MPNP Endline

Comparison of the outcome level indicators in the direct intervention, indirect intervention and control villages, whereby the indicators focused on the issues around

Within the Madhya Pradesh Nutrition Project the intervention was carried out in the three districts in two phases of direct intervention and indirect intervention. In the direct intervention areas, 300 villages were chosen wherein Nutrition Volunteers (NVs) were engaged to work with the target population. The work of NVs was direct engagement with the target groups of mother and children on issues associated with malnutrition. In the indirect intervention areas, 460 villages were reached either through a direct involvement of cluster or block coordinator or indirectly through the functionaries of Integrated Child Development Scheme (ICDS), i.e., the Anganwadi Workers (AWWs). Based on these mandates of the project interventions the present study sought to assess the impact of the activities with the key stakeholders on the outcome and the impact indicators of the project. The assessment carried out was across the sample selected from within the direct and indirect intervention areas and comparison areas to study the results in absence of the intervention.

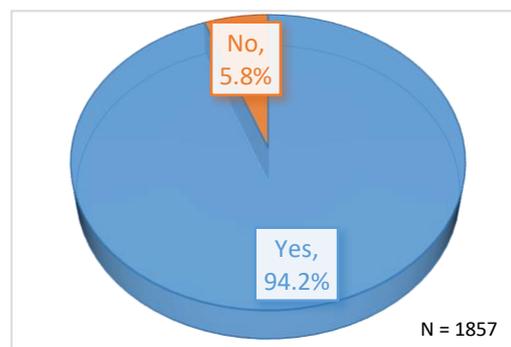
While poverty has been accounted for a major reason behind the concern of malnutrition, there are still other factors that contribute to this global public health concern. Inappropriate infant and young child feeding practice are contributors that aggravate this situation²⁶. Among the infant and young child feeding practices, some are feeding of colostrum, initiation of breast feeding to the child, exclusive breast feeding for the first six months, initiation of complementary feeding and the aspects of complimentary feeding²⁷.

A. Exclusive breastfeeding for 6 months

Across the developing countries, non-exclusive breast feeding in the first six months of child's life has been understood to account for 1.4 million deaths and 10% of the disease burden amongst the infants and young children²⁸. The importance of exclusive breastfeeding during the first 6 months of the child's life could help achieve milestones that help in reduction of overall neonatal mortality.

Literature suggests that mother's milk and breastfeeding is essential in providing benefits in context of general health (fortifying the immune system) and the growth of the child. In the present study the practice of breastfeeding was reported to have been taken up by almost all the women (94%) making it a common practice among the mothers.

Figure 10 - Mothers breastfeeding their child - Overall (Percentage)



Furthermore looking at the aspect of initiation of breastfeeding after birth, it was found that the highest proportion of respondents was from the direct intervention areas. 32% of the respondents from direct intervention areas reported to have first breastfed the child within an hour of the delivery of the child. This figure was 28% in the indirect intervention areas and 25% in the comparison areas,

²⁶ Brahman, GNV; Venkaiah, K; Laxmaiah, A et al. *Assessment of Nutritional Status of under Five year Rural children in the Districts of Madhya Pradesh State – Chhatarpur District*. National Institute of Nutrition. 2011. Hyderabad.

²⁷ Ibid.

²⁸ Black, RE, Allen LH, Bhutta ZA et al. *Maternal and child undernutrition: global and regional exposures and health consequences*. Lancet 2008; 371: 243-260

reflecting a raised level of awareness amongst the new mothers in the direct intervention areas in comparison to the other areas.

The Nutrition Volunteers (NVs) and Anganwadi Workers as part of their mandates require them to keep the mothers in their area informed regarding the exclusive breastfeeding and its importance for the health of the child. The qualitative findings suggested that the mothers in the direct and indirect areas were informed of the aspects of breastfeeding by these functionaries in their areas. . It was also found that Anganwadi workers not only disseminate the information but also tried to make it a practice to remind the mothers from time to time.

"Anganwadi didi used to inform us about breast feeding every time when she used to visit our homes."
- Member of SHG Group during Group Discussion

While this was regarding the initiation within the first hour, the number of mothers who breastfed the child between 1-3 hours was in high numbers across the entire sample and even in isolation across the three arms. Overall 60% of the women reported to have breastfed their child between the periods of 1-3 hours after the birth.

Pre-lacteals are understood be to the feed that is given to the child before the breastfeed which can be harmful to the immature gut of the child. Pre-lacteals often form a part of the tradition in the feeding practices for the new born. Overall 19% of the women across the entire sample reported to have given anything before the first breastfeed, which was a lower number than the baseline figure of an average of 33% of the three districts. Within the three areas the lowest proportion at 17% was reported from the direct intervention areas.

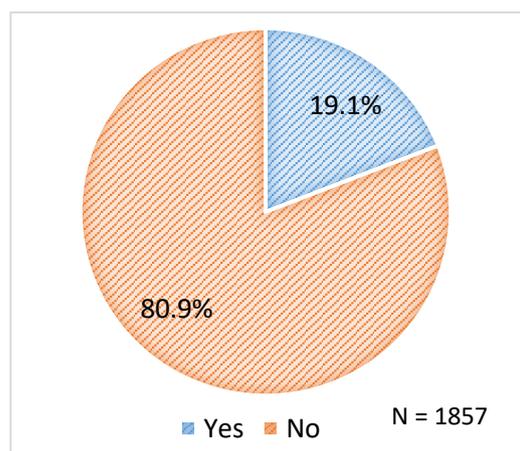


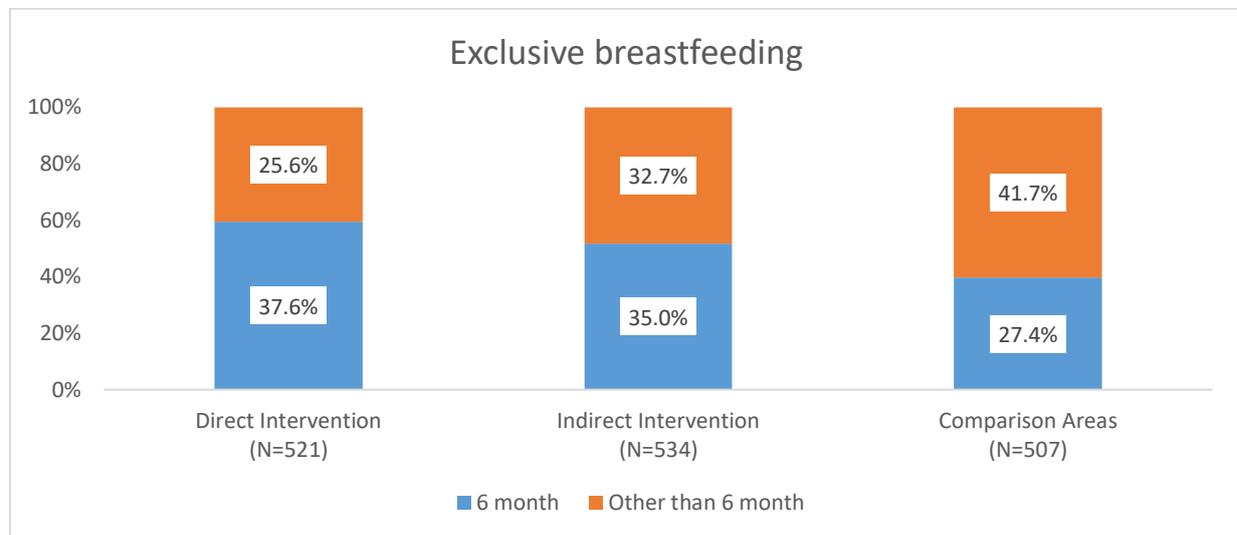
Figure 11 - Child fed Pre-Lacteals - Overall (Percentage)

Breast milk is understood to be a great source of energy, protein, fats and micronutrients for the child and its contribution to the child's health requires no explanation. Exclusive breastfeeding during the first six months was also taken up during the intervention activities. The functionaries of the project engaged in expanding the knowledge base of the mothers regarding importance of exclusive breastfeeding. There was a significant change in frequencies of women adopting exclusive breastfeeding in the intervention areas (direct) than the comparison areas as could be seen from the results.

Data collected on 1562 mothers from all the three arms, suggests around 38% of mothers practiced exclusive breastfeeding for 6 months as opposed to 35% in indirect arm and 27% in the comparison arm.

According to the qualitative discussions held with the Nutrition Volunteers (NVs) and the Anganwadi Workers (AWWs) all the women from their community are following the concept of exclusive breast feeding. Though all the mothers in their villages decided and acted upon their decision to follow exclusive breastfeeding for their baby but they were not much confident over discrimination in feeding

because of sex of the baby. They also shared that due to the preference of son, the girl child have suffered in their areas. It was found that apart from few exceptions, most of the mothers are following breast feeding though it was not exclusive.



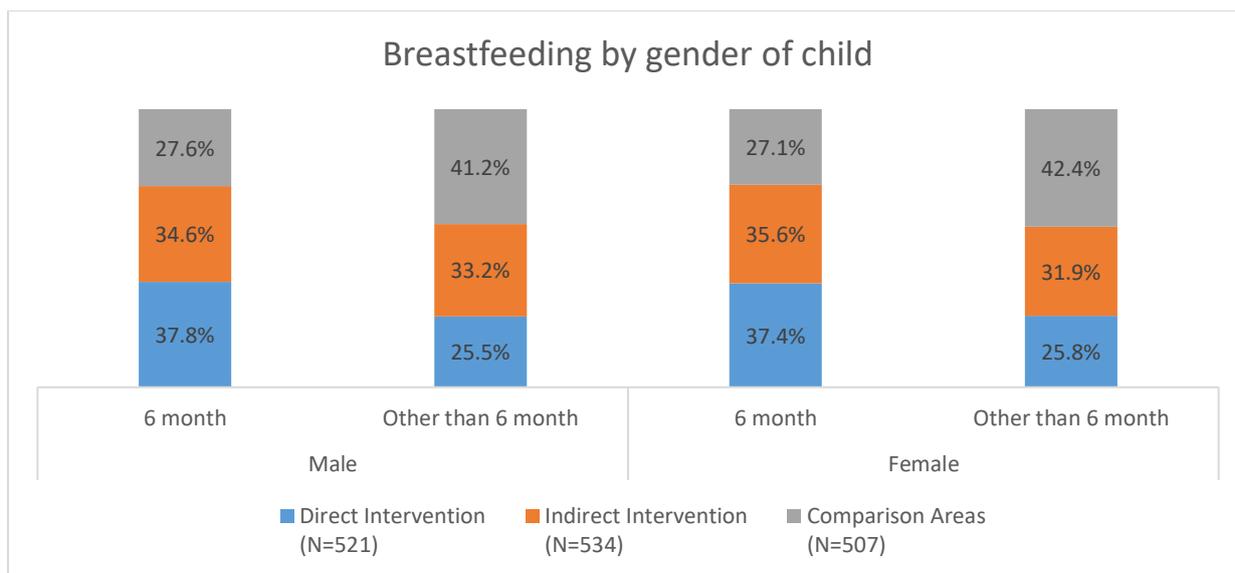
Chi-Square significant (p<0.05)

Members of the Self Help Groups (SHGs) and Village Health Sanitation and Nutrition Committees (VHSNCs) also shared that most of the elder women had not followed exclusive breast feeding because in their times no one told them about this. However, now they were aware and shared that their daughter in laws were following this concept. Those of young age groups with younger children shared that they have fed their child only with breast milk till the child was of 6 months of age.

"Nutrition volunteer used to visit to provide information on exclusive breast feeding and complementary feeding. I always tried to follow what NV and Anganwadi used to share. I have given breast milk to my child for 6 months and after that only started complementary feeding."

- Women from a direct intervention (GTC) village during group discussion

The study also tried to assess if the practice of exclusive breastfeeding has any bearing on the gender of the child. Findings suggest that there is a significant change in frequencies of women practicing discrimination based on gender of child (focal child) while adopting the practice of exclusive breastfeeding in comparison areas than in intervention areas. This is coming mostly from the comparison area as the results are similar in the Direct and Indirect areas.



Chi-Square significant (p<0.05)

B. Initiation of complimentary feeding on completion of 6 months

While breastfeeding is all the nutrition that an infant requires during the first 6 months, post that period the child requires more. With the growth and development of the infant, it is important to recognise the requirement and importance of other feed alongside the breastfeeding practice. Complimentary feeding is stated to be initiated immediately following the period of 6 months of the infant’s life and to be continued along with breastfeeding.

The complimentary feeding constituted under the child feeding practice has significant impact on the health and growth of the child. Thus it becomes essential to initiate the process at right age, and to provide right type and quantity of complementary foods. In the present study 79% of the respondents reported having started feeding solid, semi-solid, mashed or soft foods to their children, wherein within the entire sample 21% of the children were reported to be below the age of six months. The foods that were given by the mothers to their children, as per the five highest proportions were porridge or gruel (66%), bread or chapatti (50%), foods made with lentils or beans (44%), biscuit (39%), green leafy vegetables (18%).

	Direct Intervention	Indirect Intervention	Comparison Areas	Overall
Porridge or gruel (Rice/Khichdi)	68.8%	69.2%	59.3%	65.9%
Biscuit	32.9%	48.1%	37.3%	39.4%
Bread, roti, chapatti	49.6%	51.9%	50.1%	50.5%

Daal (Foods made with lentils or beans)	45.2%	38.9%	48.3%	44.1%
Pumpkin, carrots, or sweet potatoes that are yellow or orange inside	12.2%	13.8%	10.4%	12.2%
Green leafy vegetables	18.0%	19.7%	15.9%	17.9%
Other fruits or vegetables (potatoes)	10.5%	13.4%	7.9%	10.6%
Salty purchased snacks foods (chips, kurkure, namkeen,)	13.0%	21.1%	16.1%	16.7%
Sweet purchased snacks (chocolate, candies)	10.3%	12.0%	10.4%	10.9%

Figure 12 - Type of foods being fed (Percentage)

Within the component of complimentary feeding it is necessary to focus on the aspect of initiation as well as undesirable practices in this component can be harmful to the child. In the present study it was seen that the complimentary feeding practice was delayed till about 9 months and it was reported in about 29% cases across the entire sample.

The results also indicate that the initiation of complimentary feeding after the age of 6 months was reported by the highest proportion of respondents (67%) in the direct intervention areas. This was followed by the adoption of this practice by 60% of the respondents in indirect intervention areas and 54% in the comparison areas. The adoption of undesirable complimentary feeding practice in terms of initiation was reflected most in the comparison areas wherein the proportions of having started before 6 months and of delay were higher.

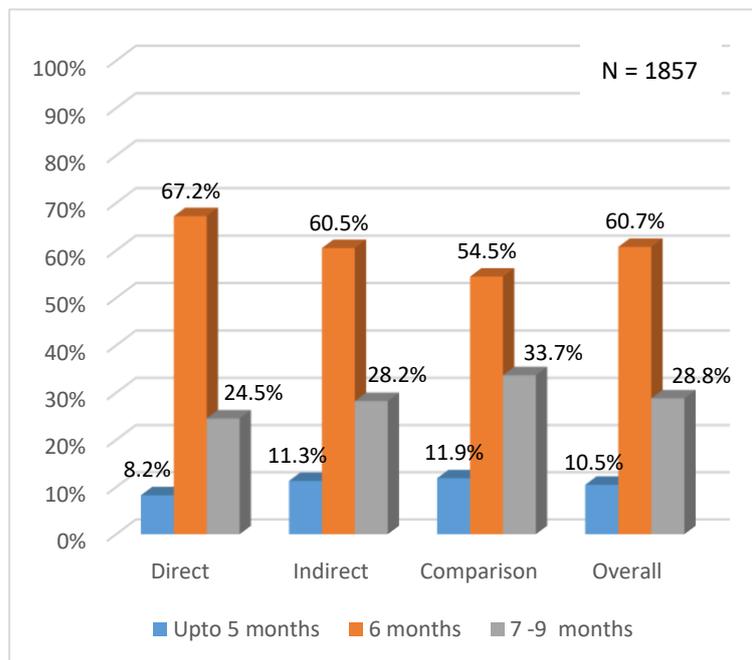


Figure 13- Initiation of Complimentary Feeding

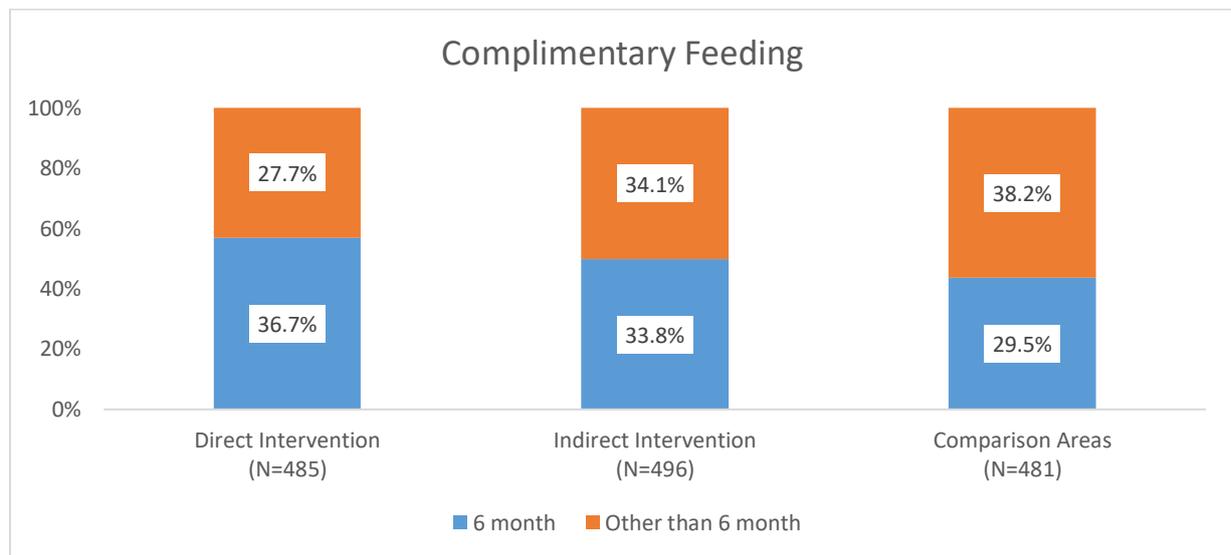
The findings from qualitative tools suggested that the young mothers are following complementary feeding strictly as told by Anganwadi workers/NVs. VHSNC members also had information regarding complementary feeding and exclusive breast feeding. Most of the elder participants amongst SHG groups shared that in their times no one used to tell them regarding complementary feeding. Those who are of young age shared that they have followed the complementary feeding as told by NV and Anganwadi workers.

“Yes, didi (NV) told me that as my child grew older (after 6 months) her needs would also grow and so my breast milk would not suffice. I should start giving her some food which is mashed or soft (like mashed potato or lentils) as it would also help to provide some nutrition for her.”

- Women during a Dyad Interview (GTC village)

Thus it can be deduced from the data that there was a significant change in the frequencies of women adopting the practice of complimentary feeding in the intervention areas than the comparison and indirect intervention areas. When seen in the context of the causal relationship in the three arms and the age of initiating complimentary feeding the results indicate a significant change when $p < 0.05$. The proportion of mothers who initiated complimentary feeding after completion of 6 months was 37% while from the indirect areas it was 34% and from comparison areas it was 29%.

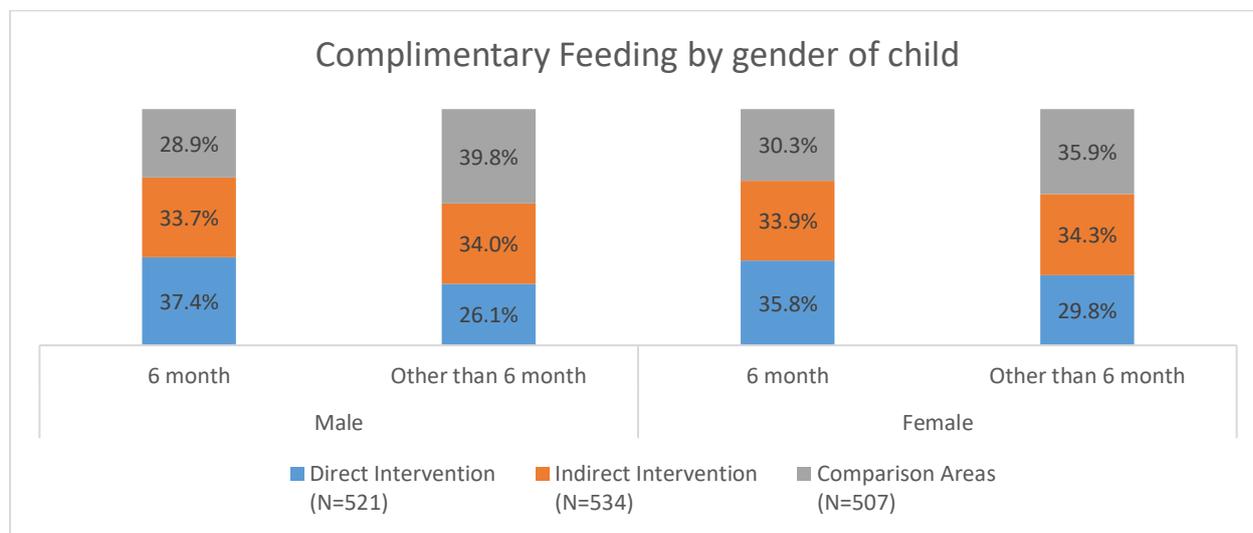
From the group discussions held with the Anganwadi Workers, interactions with the women of the villages and the observations, while Anganwadi Workers do provide information about complementary feeding to the mothers but in most of the indirect and control villages we found that mothers don't have the basic information regarding food items and frequency of food intake. Some of the mothers reported that Anganwadi workers do not pay any visit to them and don't inform them about complementary feeding practice.



Chi-Square significant (p<0.05)

Similar to the exclusive breast feeding, the study tried to assess if the practice of complimentary feeding has any bearing on the gender of the child. Findings suggest that there is a significant change

in frequencies of women adopting complimentary feeding in intervention areas than comparison areas based on the gender of the focal child.



Chi-Square significant ($p < 0.05$)

On the contrary, the qualitative discussions suggested that the sex of the child do not play any role in complimentary feeding and no one shared such incidences of complimentary feeding based on the gender of the child. The SHG group shared that in their times in - laws used to decide the complimentary feeding but all the young women shared that they have started taking decision on their own regarding complimentary feeding of their children.

The aspect of raising awareness and ensuring the adoption of the complimentary feeding practice under the context of the MPNP was through the Nutrition Volunteers and the Anganwadi Workers. The respondents were also queried regarding receiving advice on the issue of complimentary feeding practices.

From the results at the overall level, it can be reported that the majorly it was the Anganwadi Workers who were the source of advice, with 70% or more respondents reporting that across the entire sample and in isolation in all three arms. In the direct intervention areas, it should be noted that the participation of the Nutrition Volunteers (64%) in this activity was quite significant, though lesser than that of the Anganwadi Workers (70%) but still the prevalence can be accounted to be at a high rate.

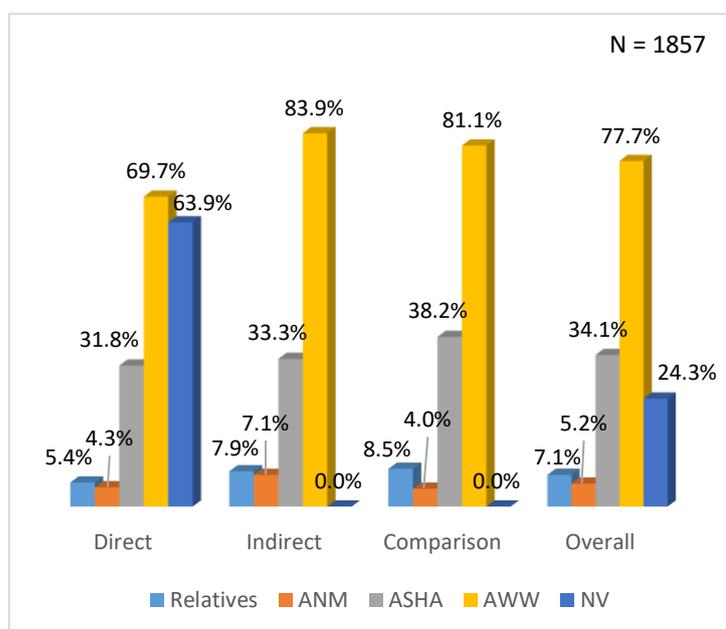
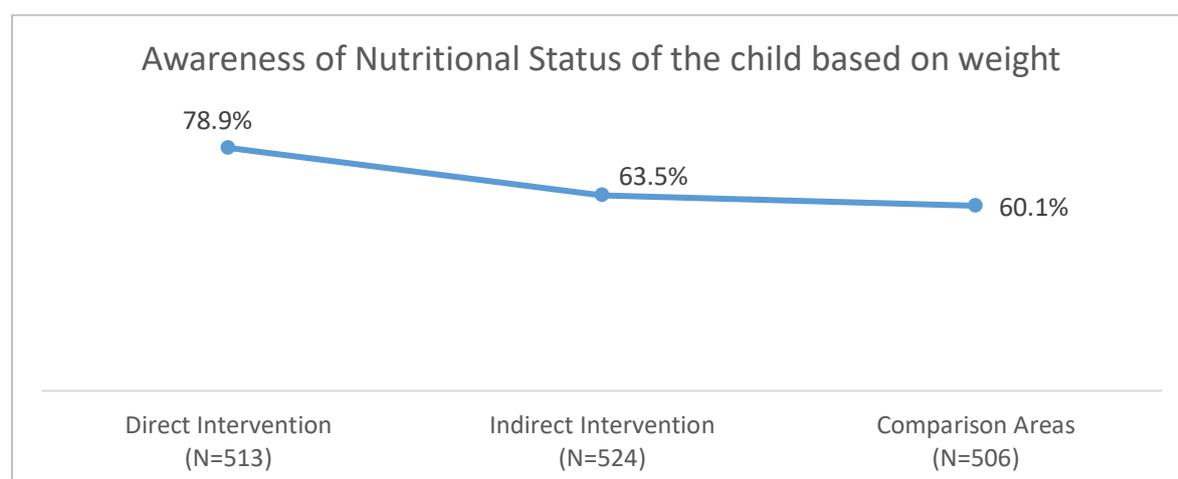


Figure 14 - Advice regarding Complimentary Feeding Practice (on any aspect)

C. Understanding and decision making amongst mothers on care seeking of children

Within the aspect of care seeking of children, apart from the components that have been taken up, the knowledge regarding the nutritional status and its aspects is also included. In the present study, the respondent across the three arms were queried on the aspects of their knowledge of the nutritional status of their child, the prevention and symptoms of the malnutrition.

When seen in the context of the association, it can be reported that 79% women are more aware of their child's nutritional status based on weight in the direct intervention area as compared to 63.5% in indirect and 60% in comparison area. This change can be accounted for as statistically significant.



Chi-Square significant (p<0.05)

Furthermore when talking about the prevention and symptoms in context of malnutrition it was observed that there were statistically significant differences in terms of awareness between the intervention areas and the comparison areas.

- ✓ Statistically significant results were reported when quantifying frequencies between the awareness for various breastfeeding and general knowledge about feeding practices for malnutrition. They were found to be higher in direct intervention areas compared to other areas.
- ✓ Statistically significant results were reported when quantifying frequencies of knowledge of symptoms associated with malnutrition. They were found to be higher in direct intervention areas compared to other areas.

		Areas		
		Direct	Indirect	Comparison
		Count	Count	Count
Knowledge related to prevention from Malnutrition	Breastfeeding the child immediately after birth	155	115	123
	Exclusive breastfeeding for first 6 months of child's life	79	79	70
	Initiation of complementary feeding at the age of completed 6 months	144	102	104

	Age appropriate complementary feeding	29	28	18
	Continue breastfeeding with complementary feeding till 2 years or beyond.	26	12	8
	Continue feeding during illness.	39	38	20
	Others	10	22	6
	Don't Know	211	260	269
Chi-Square Significant (p<0.05)				

Table 5 - Knowledge regarding Prevention of Malnutrition

		Areas		
		Direct	Indirect	Comparison
		Count	Count	Count
Knowledge related to Symptoms of Malnutrition	Wasting	17	17	11
	Stunting	56	41	28
	Underweight	193	137	131
	Thinning	117	81	56
	Fatigue	26	22	20
	Anaemia	11	11	7
	Illness	47	42	48
	Others	8	19	8
Chi-Square Significant (p<0.05)				

D. Understanding and decision making amongst mothers regarding supplementary nutrition through ICDS and access to ICDS

The Integrated Child Development Scheme is known as the world's largest public health program that is running across the world. The functionaries of the ICDS at the village level are the Anganwadi Workers. Among other aspects one of the main component of the ICDS is the provision of supplementary nutrition for the mothers and the infants and young children. This component of supplementary nutrition is brought to execution through the means of distribution of food that is of nutritious value to the targeted beneficiaries (including mothers and children).

From the qualitative data findings it came out that the women and children were receiving supplementary food from the Anganwadi Centres regularly across all the areas. The SHG group

members during group discussions shared that all of them used to get food packets from the Anganwadi centres but also reported that the entire family used to eat the supplementary food together. Few participants also shared that earlier the quality of supplementary food was not good but now they are getting good quality supplementary food.

The present study through quantitative data revealed significant association between the women who were the targeted beneficiaries with three aspects. These three aspects constitute of the child receiving hot cooked meal or snacks from the Anganwadi Centres, mothers receiving take home ration of cooked or uncooked or ready to eat food for them when child was younger than 6 months and receiving take home ration of cooked or uncooked or ready to eat food for the children when child was between 6 months-3 years in age.

- ✓ Women involved in Direct or Indirect Intervention have significantly higher frequencies associated with receiving cooked or uncooked or ready to eat food from the AWC as ration to take home when child was younger than 6 months in age (0 to 6 months) in age.
- ✓ Women involved in Direct or Indirect Intervention have significantly higher frequencies associated with receiving cooked or uncooked or ready to eat food from the AWC as ration to take home when child was between 6 months - 3 year in age.
- ✓ Women involved in Direct or Indirect Intervention have significantly higher frequencies associated with child receiving hot cooked meal and or snacks from AWC.

Access to Supplementary Nutrition from AWC						Chi Square
		Direct	Indirect	Comparison	Overall	
Did you receive cooked or uncooked or ready to eat food from the AWC as ration to take home while child was younger than 6 months in age (0 to 6 months)?	Received and exclusively consumed by me	Count	162	141	119	422
		% within RTH	38.4%	33.4%	28.2%	100.0%
	Received and consumed along with family members	Count	367	357	365	1089
		% within RTH	33.7%	32.8%	33.5%	100.0%
	Offered but didn't take	Count	17	19	29	65
		% within RTH	26.2%	29.2%	44.6%	100.0%
	Not offered	Count	14	28	23	65
		% within RTH	21.5%	43.1%	35.4%	100.0%
Total	Count	560	545	536	1641	
	% within RTH	34.1%	33.2%	32.7%	100.0%	

Table 6 - Access to Supplementary Nutrition from AWC

Moreover within this access to the supplementary nutrition that is provided through the mean of ICDS, it is also important to focus on the consumption of these rations. The consumption patterns as per the literature have indicated the consumption by all the family members. Thus within the increased access, the correct consumption was also taken up as part of the process.

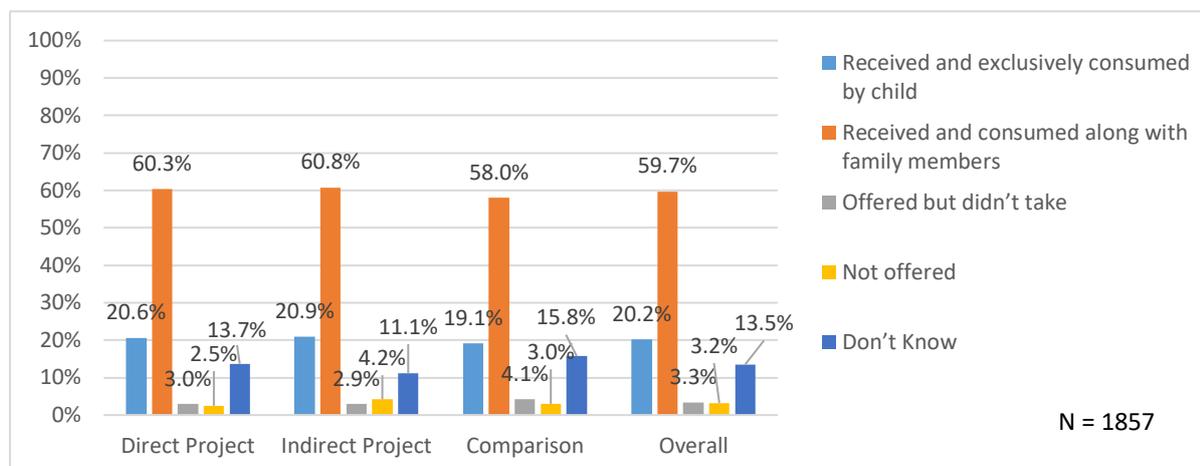


Figure 15 - Receipt and consumption of RTH from AWC (Percentage)

It also came out during qualitative research with the women from the villages across the entire sample that while the supplementary food is being provided in each and every village through Anganwadi centers, it was the entire family that was consuming the food that was being provided either for the children or the mothers. This finding was reiterated in all discussion that were held across the three project districts.

The trends in the present study suggest that the consumption patterns have been the same for the larger proportion wherein the rations are consumed by entire families. However there are some positive changes as well that reflect that the rations are consumed by the intended recipients only and this change is greater in the direct areas than the comparison areas.

"Anganwadi provide us packets of khichdi and halwa which all the family members used to eat."

"In my family, all the family members used to eat the halwa and khichdi provided by the Anganwadi center. How can we eat alone when all the members of the family are also there? Eating alone is not a good thing you know."

- Women during Group Discussions

Assessment of outcome level changes on gender transformative change in the GTC project villages

Within the Madhya Pradesh Nutrition Project, in a later phase another component was introduced that was called the Gender Transformative Change (GTC) Component. As the name suggests the GTC component was focussed on the gendered aspects within the domains of the project and was rolled in selective villages.

Existing within the overarching framework of patriarchy and gendered divisions, the society at large and especially within the rural setup sets aside specific roles and responsibilities for women. The mandates and traditions dictate various aspects such distribution of the workload or food distribution or decision making based on the gender of the members of the family. The women have been largely relegated to be the sole bearers of responsibilities of household chores and child care. They choose and conduct their work based on these premises and they are further propagated as norms and beliefs in the society. The women living as the lesser half in the society even in terms of distribution of food are the recipients of the lesser portions. From beginning there is a tradition and practice of neglect of the girl child that initiates this process of discrimination and carries on for them even as women, throughout. The power and hierarchy structures in the communities and families position the women at the lower rungs and aided with these discriminatory practices even exclude them from the processes of decision making.

Working within the same premise, the MPNP aspect also sought to address some of these issues by working with the married couples through extensive usage of Information, Education and Communication (IEC) materials with the married couples in focussed villages.

A. Workload distribution amongst the families

Looking at the aspect of workload distribution within the households, the respondents were chosen from the villages wherein the GTC component had been rolled out. In these while there are many aspects that can be seen, here we will focus on the aspects of husband helping out in household chores and child care.

It could be seen in the present study that there were positive changes that were reported by the respondents that resulted out of the intervention of the GTC component. While there was a positive increase in the husbands helping out in household chores to the frequency of always, there was a decline reported in the frequency of never. In a similar trend, in child care, it could be reported that there was significant change that was reported by the respondents post the intervention. The data reflects that husbands are now more frequently (significantly) looking after children.

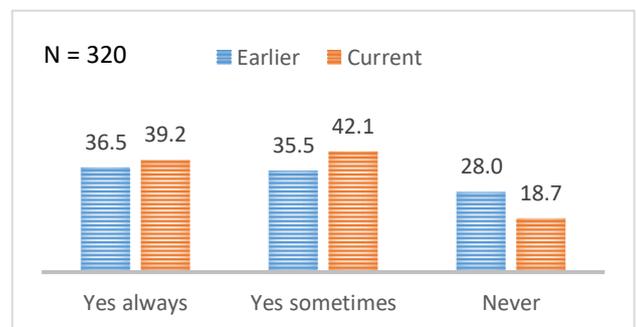


Figure 16 - Husbands helping out in Household Chores (%)

The qualitative findings from the dyad interviews held with the married couples from the GTC villages took up the issues surrounding workload distribution within their households. The situations were specifically discussed in context of post intervention situations. Most of the couples shared that earlier they used to think that women do less work in comparison to men but after attending the meetings they got to know that women's work is not considered as work so no one gets to know about that whereas in reality they work more than men.

The chi-square test based on workload change suggest that post intervention husbands are now more frequently (significantly) looking after children as can be seen in Table 6 below.

Husband looking after children							
				Current			Total
				Yes always	Yes sometimes	Never	
GTC villages	Earlier	Yes always	Count	162	13	4	179
			% within Childcare	90.5%	7.3%	2.2%	100.0%
		Yes sometimes	Count	35	132	3	170
			% within Childcare	20.6%	77.6%	1.8%	100.0%
	Never	Count	10	6	10	26	
		% within Childcare	38.5%	23.1%	38.5%	100.0%	
	Total	Count	207	151	17	375	
		% within Childcare	55.2%	40.3%	4.5%	100.0%	

Chi-Square Significant (p<0.05)

Table 7 - Husbands helping in Child Care - Earlier and Current

The workload distribution was taken up during the meetings held in the Gender Transformative Change villages to be addressed as an important matter of concern. The uneven distribution of work made the burden of work higher for women and aggravated with inadequate nutrition it was affecting the health of the women in the communities. A lot of couples shared that women used to work a lot in comparison to men and all the other members should help them in their work. Further during the dyads, mostly the couples shared that they help each other and have now started to divide their work with mutual understanding. Most of the male respondents shared that they help their wives in their work to reduce her work load. They reported that in order to reduce the work load from women they have started helping their wives in household chores and child care.

"My husband now help me in work, He brings water from hand pump, help me in child care and sometimes make tea also. Earlier he never used to pay much attention towards home and children."

- Women during a Dyad Interview (GTC village)

"My husband used to help me since our marriage. He attended all the meetings and since then he became more responsible towards home."

- Women during a Dyad Interview (GTC village)

B. Food Distribution

Within the aspect of food distribution we will be looking at the aspects of the husbands looking after the dietary requirements of the women and having meals and sequence for the women having meals within the households. Talking about the husbands having meals with the respondents it can be seen that there has been a significant change in frequency of women reporting that husbands now eat meals with them.

Husband eating meals with you							
				Current			Total
				Yes always	Yes sometimes	Never	
GTC villages	Earlier	Yes always	Count	148	14	4	166
			% within meals	89.2%	8.4%	2.4%	100.0%
		Yes sometimes	Count	24	144	4	172
			% within meals	14.0%	83.7%	2.3%	100.0%
		Never	Count	5	5	27	37
			% within meals	13.5%	13.5%	73.0%	100.0%
	Total		Count	177	163	35	375
			% within meals	47.2%	43.5%	9.3%	100.0%

Chi-Square Significant (p<0.05)

Table 8 - Husband having meals with women - Earlier and Current

There was a positive change that was observed while testing the association between the intervention and the aspects of food distribution within the families. It can be reported that there has been a significant change in frequency of women reporting that the frequency of husbands looking after their diet has increased sometimes.

"I and my husband eat together after serving everyone in the family. Though it never happened that less food left at the end but if this ever happens I will make food again because both of us will have to eat."

- Women during a Dyad Interview
(GTC village)

Husband looking after your diet							
				Current			Total
				Yes always	Yes sometimes	Never	
GTC villages	Earlier	Yes always	Count	119	16	2	137
			% within diet	86.9%	11.7%	1.5%	100.0%
		Yes sometimes	Count	11	163	6	180
			% within diet	6.1%	90.6%	3.3%	100.0%
		Never	Count	4	15	39	58
			% within diet	6.9%	25.9%	67.2%	100.0%
	Total		Count	134	194	47	375
			% within diet	35.7%	51.7%	12.5%	100.0%

Chi-Square Significant (p<0.05)

Table 9 - Husbands looking after the diets of women – Earlier and Current

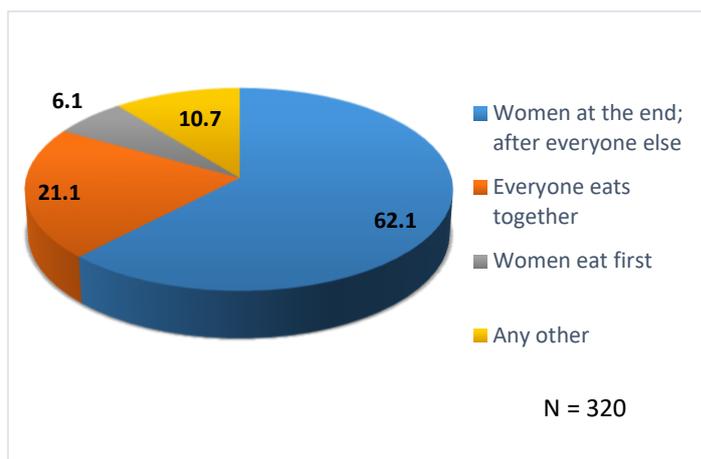


Figure 17 - Sequence of Having Meals - GTC Villages (Percentage)

While there have been changes in the above mentioned aspects, some aspects were reported at the existing level. The sequence of having meals in the family is dictated wherein the women eat at the end and this was reported to be the case by 62% of the respondents across the sample from the GTC villages. There were 21% respondents who reported that within their families all family members consumed food at the same time, there were 6% who reported that in their families, women members were

the first members to consume food. Please note that the women who had said that earlier (during the baseline around 2014) they “always” used to eat with their husbands (166 persons) out of which women who reported eating “always with their husbands”, 89.2% are still eating “always with their husbands”.

Similar trends were observed within the data findings from the qualitative tools. During the dyad interviews lot of couples shared that they eat together since they started attending meeting on gender in their villages. However there were some women respondents who shared that their husbands still do not eat with them. Other few also shared that they used to eat whenever they feel hungry and that it had been the trend since their marriages. These latter two responses had not showed much change in the families even after attending the meetings.

C. Decision Making

There are different components within the decision making that can be taken up in the context of decision making. Here by we shall be taking up some of the components which will include a reflection on the power hierarchy regarding decision making.

Looking at the aspects of decisions regarding health care of the women and their children, the data reflects that in both situations the majority of the respondents reported themselves to be the primary decision makers. The trend observed from the collected data in this regard indicated the women to be the primary decision makers in this regard followed by their husbands as the next highest proportion.

In the decisions regarding the health care of the mothers who were our respondents in the present study, half of the women reported that they were the decision makers in this regard, followed by proportion of 28% who reported their husbands to be the primary decision makers.

Figure 18 - Decision making - Health care of women (Percentage)

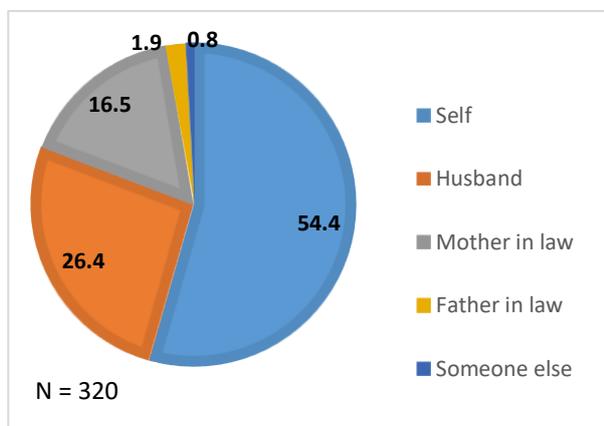
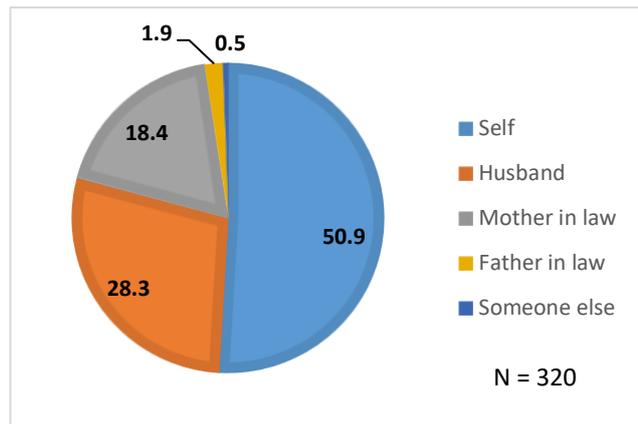


Figure 19- Decision making - Health care of children (Percentage)

In the context of the decisions regarding health care of the child more than half of the women (54%) reported themselves to be the primary decision makers, followed by the proportion of 26% of the respondents who reported their husbands to be the decision making authority in this context.

Looking through a retrospective context, the respondents were also queried regarding their space and position as decision makers on the household issues within the present context in comparison to an earlier time. Here the earlier time indicates the space before the GTC intervention was introduced in these villages.

In this the respondents reported an increment in their participation as decision makers on household issues in the present times as compared to earlier times and a decrease in the frequency of nil participation of theirs in the decisions regarding household issues.

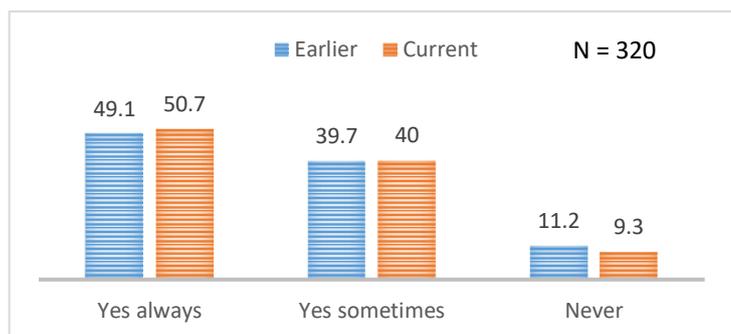


Figure 20 - Women taking decisions on HH issues - Earlier and Current (Percentage)

I have got married two years back and I have a son. I and my husband have decided plan our family since the birth of our first child. Now we only want a girl child and then I will go for sterilization operation."

- Women during dyad interview (GTC village)

Assessment on the working of Anganwadi Workers (AWWs) and Nutrition Volunteer (NVs)

A. Job related skills –

The major source of information regarding the Anganwadi Workers (AWWs) and the Nutrition Volunteers (NVs) were the in depth interviews that were conducted with these functionaries, the focus group discussions, the dyad interviews that were held with married couples and the observations undertaken during the process of data collection.

During the group discussions the nutrition volunteers shared that they used to conduct home visits to the homes of the pregnant and lactating mothers along with Anganwadi workers. Apart from that they also pay visits to mothers whose children are malnourished with regular frequency and pay special attention to such houses. The age group that is often part of focus are children from the age of 4-6 months when the exclusive breastfeeding needs to be continued and the 6-8 months when the complimentary feeding needs to be started effectively. Further it was also shared by them that they helped the Anganwadi workers in their villages to take the weight measurements of children and take Mid Upper Arm Circumference (MUAC) measurements and also take both of these observations on their own. The NVs also shared that they fill the growth chart as per the weight of the child. While during the interaction with the women of the community it was found that the NVs used to take weight measurements and share those but they do not share the status of the child with the mothers due to which mothers do not know the status of their children.

Anganwadi workers also shared that they all conduct home visits to the homes of pregnant and lactating mothers and mostly women who are mother of children between 0-5 years of age to take weight of the child and MUAC and accordingly fill the growth chart. Similarly during the interaction with the community, some of the women reported that the Anganwadi Workers do not pay visit to their houses. Almost all the women reported that Anganwadi do not inform mothers about the status of their children after taking their weight.

"We have seen since NV have started working in the village, there is more awareness amongst mothers regarding malnutrition and breast feeding."

- VHSNC member during group discussion

The couples who were interviewed during the dyad interviews shared that the AWWs/NVs used to take the weight of the child regularly and shared it with the mothers as well. The female respondents shared that the AWWs used to visit their houses every month to weight the child. Apart from that the AWWs/NVs also kept the women informed about exclusive breast feeding and complementary feeding and were also in some places trying to ensure that the women were following these practices.

It could be deduced that in most of the villages AWWs or the NVs were conducting home visits to the homes of the pregnant and lactating mothers to take weight and MUAC of the child. Most of the mothers reported that though Anganwadi Workers and NVs inform them about the weight of the child but they are not aware of the growth status of the child. Thus the major finding is that neither AWWs nor NVs shared the growth status of the child with their mothers at any village.

B. Empowerment of Nutrition Volunteers –

Through the interaction with the Nutrition Volunteers (NVs) it was found that all the NVs present there were vocal and shared their perceptions towards every question asked. During the interaction within the group discussions held with the NVs, all of them were confident about their work and also actively shared their change story. There was confidence in their ability to convey themselves as compared to the level of participation of other women in the other group discussions that were held across the three project districts.

Few of the nutrition volunteers also shared how things had changed in their own households after they had joined as NVs and that this positive change was clearly visible. Most of them shared that earlier they had never stepped out of their houses without their husbands but now not only were they working, they were also visiting district headquarters and attending the trainings held for them, all on their own. While before joining their families and male members had been sceptical about their work, after they had started working and with the positive change that had come about in their villages, their fathers and husbands had turned supportive and even encouraged them to continue their work.

“ Earlier my father was doubtful when I started working as Poshan Swayamsevi (Nutrition Volunteer) and my family was not totally against it but sceptical. But now when everyone in my village recognises my name and appreciates my work so much, my father himself in the morning wakes me up and keeps asking me to hurry up to go to my work.”

- Nutrition Volunteer during group discussion

“We were never even going out of our villages, alone earlier and we never thought that we would. But now, look we have attended trainings, so many of them, all alone on our own and we are even here (dissemination event of CARE, India) on our own. We never thought we would do this. We are able to talk to anyone nowadays and we never shy away now.”

- Nutrition Volunteer during group discussion

Even during other qualitative discussion, some of the members of the other groups (SHG members, AWWs, and VHSNC members) shared that the NVs in their villages were more confident in comparison to before. Earlier they used to accompany the Anganwadi Workers and now they were perfectly handling home visits on their own.

The findings could be deduced to suggest that the NVs have become more confident and are able to handle severe malnourished children of their villages. Earlier they were not even aware of malnutrition but now they are aware of various concepts of malnutrition and had worked towards tackling it in their respective villages and found great success stories.

Conclusions and Recommendations

Malnutrition accounting for around 45% of the deaths of the children below the age of five years continues to be a major public health concern, especially so in the developing countries, like India. The present study was undertaken as an impact assessment carried out to assess the intervention of the Madhya Pradesh Nutrition Project addressing malnutrition in the three districts in Bundelkhand region of Madhya Pradesh.

The goal of the study was of 30% reduction in the prevalence of severely underweight in the context of the NIN data and 20% reduction in the prevalence of underweight. The data reported from the end line indicated towards achievement of the goals (30% of underweight and 10% of severely underweight) within the direct intervention areas and even significant improvement in the indirect intervention (34% of underweight and 14% of severely underweight) in comparison to the comparison areas (43% of underweight prevalence and 16% prevalence of severely underweight) wherein the project activities were not undertaken.

Data collected on mothers from all the three arms, suggested that around 38% of mothers practiced exclusive breastfeeding for 6 months in the direct intervention arm as opposed to 35% in indirect arm and 27% in the comparison arm. Findings suggested that there is a significant change in frequencies of women adopting exclusive breastfeeding in intervention areas than comparison areas based on the gender of the focal child. When seen in the context of the causal relationship in the three arms and the age of initiating complimentary feeding the results indicate a significant change when $p < 0.05$. The proportion of mothers who initiated complimentary feeding after completion of 6 months was 37% while from the indirect areas it was 34% and from comparison areas it was 29%.

Further it can be reported that 79% women are more aware of their child's nutritional status based on weight in the direct intervention area as compared to 63.5% in indirect and 60% in comparison area which can be accounted for as statistically significant. Regarding the supplementary nutrition that was received through the ICDS, it came out that the women and children were receiving supplementary food from the Anganwadi Centres regularly across all the areas. While all of them used to get food packets from the Anganwadi centres but it was also reported that the entire family was consuming the supplementary food together rather than the sole beneficiaries which should be the norm.

The Gender Transformative Change (GTC) component was another intervention that was followed in the MPNP and carried out in some of the villages in each of the districts. The GTC component sought to address the issues surrounding malnutrition in the context of gender, such as the workload distribution, food distribution that involved discriminatory practices. The findings from the study showed that the populations with whom the GTC activities were undertaken showed positive changes in the families in the workload distribution, food distribution and decision making. The male members in such families had started sharing in the workload with the women and were also looking after the diets of the female members. The decision making in the households could be understood to have become a more participatory practice involving the female members of the families.

Job related skills of the Anganwadi Workers and the Nutrition Volunteers in the sampled clusters were discussed upon and these functionaries were found to possess the essential skills. While they were conducting home visits, and taking measurements of the children, they failed to share the status of

the children with the mothers in these clusters. The project was found to have been an enhancing exercise for the women who had been engaged as the Nutrition Volunteers (NVs). They expressed to be empowered post the intervention and perceptible changes were experienced in their confidence, self-esteem and other abilities.

Recommendations

The study findings point to few challenges for improving the under-nutrition status of under 5 children amongst the coverage districts, demand of ICDS services at the community level to reduce childhood malnutrition. The following recommendations highlight the possible strategies to address these gaps.

Strengthening the existing system

Findings suggested that the work of Nutrition Volunteers resulted in a positive impact on the situation of malnutrition within the communities. Replication or scaling up of their roles and responsibilities via the medium of existing functionaries can aid in the continuation of the impact -

- The Anganwadi Workers were engaged in the indirect intervention areas as part of the intervention. The setup of Anganwadi Centres (AWCs) involves these AWWs as active functionaries of the AWCs and the rural setup.
- The AWWs can maintain the growth status of each and every child (monthly pictorial update of each child) within their respective Anganwadis and take charge of informing the mothers about the status of the child.
- The elder members of the SHG groups and VHSNCs in the village are women who are interested but ill-informed regarding issues of malnutrition. Engaging these women with the Anganwadi Centres can provide assistance to the AWWs and not add on to their responsibilities based on which they will actively participate.
- Thus there is requirement for the capacity building of the Anganwadi Workers so as to effectively enhance their roles and responsibilities.

The gender transformative change component seemed to have brought about change to some degree which requires enhancement and continuation.

- The different days marked through the medium of AWCs such as VHND or THR distribution should make participation of male members mandatory. This would create the initiation of interest within the males regarding the various aspects of nutrition and health of women and children. It has been observed that engagements of male members and male health workers can be an effective method.
- Thereafter, the Anganwadi Centres (AWCs) can be utilised on these days to hold meetings and awareness sessions with the males of the communities regarding gendered distribution of workload and food.

The existing programmes related to health and nutrition should improve and enhance linkages with other programs within the village. As the Swachh Bharat Mission has seen strides of improvement regarding recognition within the villages, the ICDS and its functionaries should be linked to create greater awareness.

- It was observed that members of SBM rural make visits to the rural setups regarding the open defecation status and usage of toilets. These functionaries can be trained regarding aspects of health and nutrition, in particular, moderately and severely underweight situation.
- Thus these functionaries can help in monitoring of the nutritional status of these children, as an added measures. Their reporting mechanism should involve reporting to the block level officers.

Management of Severe Acute Malnutrition (SAM) children and referral to Nutrition Rehabilitation Centres (NRCs)

There was a sceptical and non-supportive attitude that was seen amongst the mothers of malnourished children regarding the admissions in Nutrition Rehabilitation Centres (NRCs). These require active redressal by the system.

- Some provisions of the NRCs need to be introduced at a lower level which would increase the access for such mothers. These mothers require greater level of attention and monitoring which can be brought through the AWWs.
- Experience dictates that incentives in themselves are falling short in increasing the referral of SAM children to the NRCs, therefore, the mothers and other family members in such cases require repeated counselling by the AWW/ASHA. The counselling should also cover aspects of follow up visits post child being admitted to the NRC to avoid relapse.
- The villages that have not had referrals for longer duration of time (months/years) should be identified and corrective measures need to be put in for such spaces. This can engage the sector supervisors/CDPOs and the FD of NRCs.

Nutrition related knowledge and attitude

The study highlights the need for increasing the knowledge and attitudes of the pregnant and lactating women to address the issue of malnutrition within the community. The following are the specific recommendations related to knowledge and attitude:

- The respondents within the community (mothers, caregivers and community influencers) can be addressed to raise community understanding to address low knowledge levels on malnutrition causes and prevention.
- The mothers and caregivers require the right level of understanding to address the issues related to exclusive breastfeeding (EBF) and complimentary feeding (CF). This should also involve addressing the misconceptions on breastfeeding such as discontinuing or reducing during any illness. In this regard home visits of children of specific age groups such as 4-6 months and 6-8 months should be increased for better compliance of these mandates.
- For the category of mothers of SAM/MAM children in addition to the group meetings the provision of individual counselling sessions should also be introduced. These sessions could focus on enhancing the knowledge base and addressing issues that they may be facing at individual level.

Motivating / Mobilizing the Frontline Workers / Service Providers

Findings suggests that the model of Nutrition Volunteer in the direct intervention villages has worked really well on the issues related to enhancing the knowledge, attitude and practices of breastfeeding and complimentary feeding among pregnant and lactating mothers.

- The current ICDS workers (AWW and AWH) are mandated with the same roles and responsibilities which were taken up by the NVs. There is thus requirement of systematic handholding and periodic reporting to enhance their participation to the level that there is no requirement of introduction of added functionaries.
- Enhancing the existing skills and supportive supervision of the AWW as well as increased focus on the job training could lead to better results.

- Building profile of frontline service providers like AWW and AWH as proactive respondents, partners and support system to community needs for malnutrition management at village level can be undertaken in this regard.
- Strengthening trust and congenial relationships of frontline service providers with community stakeholders (mothers, caregivers and influencers) is vital for increasing both coverage and demand for ICDS services at community level.

Capacity building of Health Service Providers and building conviction among the providers

Capacity Building Resources for Effective Service Delivery

- IEC materials on malnutrition are required by all frontline service providers for effective inter-personal communication at community level.
- IEC materials should be child-focused primarily in laminated pictorial format and written in simple language for creating awareness and ensuring compliance of medication at the community level.

Training Inputs on Malnutrition

- Focused malnutrition management training on symptoms, prevention and treatment (use, relevance and impact of EBF and CF). Targeted malnutrition training of AWW and AWH across the districts.
- Within the training inputs, the computer literacy of the concerned ICDS staff at the block and district level should be addressed. Based on the gaps identified through the MIS, the monthly field visit plans by the CDPOs and supervisors should be reinforced.
- To enhance the effective use of the MIS for identification of problems, the scope of its use should be enhance and trainings should take up sessions for the concerned staff.
- Since some of the AWWs are best-informed on training inputs across the districts, further building on their knowledge levels has positive implications as they are amongst the most trusted health provider and also considered one of the best communication mediums for malnutrition advocacy at the community level.
- Training programmes need to be organised periodically followed by refresher training at regular intervals to enforce importance of malnutrition management and increase coverage and compliance of EBF and CF. Long gaps in training inputs will reduce priority of malnutrition management. Better coordination of training programmes among CDPOs (ICDS officials) and medical officers (Health Department officials) to improve quality, uniformity, synergy and monitoring of training inputs to frontline service providers. Variance in understanding and planning on training content and frequency has potential to result in adhoc efforts and dilute focus of capacity building interventions.