Social Science Spectrum ISSN 2454-2806
Vol.5, No.3, December 2019, pp. 174-189

Role and Barriers of Integrated Child Development Service in Bihar, India

Jitendra Gupta[**] & Abhilasha Gupta[*]

Abstract

Children face a lousy situation due to lack of food and nutrition in the early age of life, the most crucial period when social, emotional, language, cognitive, physical/motor development and life-long learning are laid. The results by analysing NFHS data portrayed that only nine per cent of children aged 0-71 months had availed any services from AWCs, whereas the health check-ups (0.7%) and measurement of weight at AWC (0.5%) services were least likely to be accessed in Bihar (2005-06), while it improved significantly in the latest round of the survey. Poor sections of the society have a better access to the services provided by AWCs. Atmosphere of the AWCs is not up to the mark and requires quality improvement. Poor registration in them is not only due to lack of infrastructure but also to cultural and ecological factors. Children are without basic amenities, poor lighting, and hot humid conditions. If the AWCs get basic amenities, children would be more attracted to join them. With the provision of electricity, workers would be able to take audio and video classes under pre-schooling. Intervention for nutrition also requires multi-sectoral attention.

Keywords: Anganwadi Centre, SC/ST, SWOT, NNM, Poshan Abhiyan.

I. Introduction

Children face a lousy situation due to lack of food and nutrition. Their initial years are the most crucial period when social, emotional, language, cognitive, physical/motor development and life-long learning are laid. This time is most vulnerable to morbidity, malnutrition, resultant disability and mortality. The Government of India has started various policies and programmes such as National Food Security Act, 2013, Antyodaya Anna Yojana, Mid-Day Meal, Anganwadi centers, Integrated Child Development Services (ICDS), etc., for improving women's and children's health.

The ICDS programme was started in 1975 in pursuance of the national policy for children. It is multi-sectoral involving several government departments. It provides an integrated approach for converging all the essential services for better child care, early stimulation, learning, health and nutrition, water and environmental sanitation aimed at the young children, expectant and lactating mothers, other women and adolescent girlsThe anganwadi worker is the most peripheral official who implements the programme services at the village/ community-level. The efficacy of the programme has been greatly hindered by policy implementation from the beginning. It has affected its overall performance at all levels.

The policy related to early childhood focuses almost entirely on educational objectives. Sound investments in interventions that reduce adversity are also likely to strengthen the foundations of physical and mental health, which would generate even larger returns to the society (Center on the Developing Child at Harvard University, 2011 and Knudsen et. al., 2006). In a study of Bangalore in 1996, only about 25 per cent of Anganwadi workers provided nutrition health education (KL, 2014) and in Rajasthan in 2005, there was a lack of active participation of women. It found a positive correlation between literacy status of women and attendance at Anganwadi centre's education talks (HRD & DWCD, 2005). The research documents an encouraging trend with a substantial increase in the utilization of services provided by the AWCs in Bihar. This positive change over time suggests that child development services are making an impact.

[**] Dr. Jitendra Gupta, Assistant Professor, Symbiosis Medical College for Women, Symbiosis International University, Lavale, Pune-412115, Email: jitendra.gupta@smcw.siu.edu.in (Corresponding Author)

[*]Abhilasha Gupta, B.Ed. and M.Ed, Rajarshi Tandon Open University, Allahabad. Email: guptabhilasha1992@gmail.com

The factors for ineffective performance of ICDS are inadequate resource allocation, poor governance and programmatic deficiencies. Compounding the challenges is the fact that in 2001 the Supreme Court of India issued a provisional order stating that the ICDS programme was universalized and its implementation came into effect by 2004 (Mohmand, 2012). Ithas created a new challenge for implementing bodies as there is a need to not only expand the programme but to make assured expansion with quality.

As highlighted in a fairly recent research on ICDS, the universalization of ICDS and the effectiveness of its implementation hinges on the quality with which the programme is universalized (Deaton & Drèze, 2008). The study mainly concentrated on the differences between perceived objectives and actual reality at AWCs. The present study has tried to explain the working of AWCs in Bihar, covering four to six weeks to fulfil the objective. Many factors influence the working of Anganwadi workers (AWWs), be it strictness of CDPOs., level of education of AWWs, level of training and supervision at their AWCs. Their region of work also influences the working hours/days of AWWs. The centres established in developed regions are more active and maintain decent level of work, whereas backward areas do not maintain a bare minimum level of satisfactory services. These discrepancies were found during the visits to three selected districts of Bihar.

Women from the rural settlements are not much aware of the food diversity, and it affects the nutritional status of the children and themselves. Assessing health and nutritional well-being is essential. Many studies show that nutrition is one of the leading factors which causes infants' and children's deaths. As compared with men, women require higher nutrient density diets in reproductive age. It makes them vulnerable to micronutrient deficiencies. The deficiencies impair women's health and the health of their children. SC/ST women (more than 90%) are concentrated in the first three groups (poorest, poorer & middle) of wealth index in both rounds of NFHS. Scheduled castes and tribes are characterized by rural background, illiteracy, economic backwardness, indebtedness, few assets, etc., and social retardation (Ranade, 1990).

Table 1 Percentage distribution of interviewed women by wealth index, Bihar 2005-16

Wealth index	NFHS-3		NFHS-4	
	Overall	SC/ST	Overall	SC/ST
Poorest	26.2	51.6	48.6	66.1
Poorer	28.8	30.8	23.7	19.9
Middle	18.4	8.1	14.2	8.8
Richer	16.0	7.4	9.8	4.3
Richest	10.7	2.2	3.8	1.0
Bihar (N)	3,818	665	45,812	10,360

Well-nourished mothers are expected to give birth to well-nourished children. So, children of SC/ST mothers are more prone to suffer from malnutrition. As per NFHS-4 estimates, the mortality rates at the neonate and post-neonatal times, and children under-five are significantly higher for SCs/STs than any other social groups in Bihar as evident in Figure 1. Children belonging to SCs/STs have deficient nutritional status and higher prevalence of stunting, wasting and underweight in this group.

Figure 2 shows that about 67 per cent of SC/ST children were stunted, 33 per cent were wasted and 68 per cent were underweight. It was higher than the other social groups/castes during NFHS-3, whereas there has been a slight improvement in nutritional status in children over one decade in NFHS-4.

The main reason to take this marginalized group (SC/ST) is that it has a higher mortality rate, poverty, and nutritional status. Children below age five years are considered as the most perspective age group of the children most affected. In Bihar, which is the host of a very high percentage of malnourished women and children. Further, women face many complications in their day-to-day life

due to a lack of nutrition in their dietary patterns. Among SC/ST women, the critical question based on the existing literature and factual materials to be answered by exploring the potential strategies to address nutrition and health of SC/ST women and children through SWOT analysis of ICDS program in Bihar.

Figure 1: Early childhood mortality rates, Bihar 2015-16 (NFHS-4)

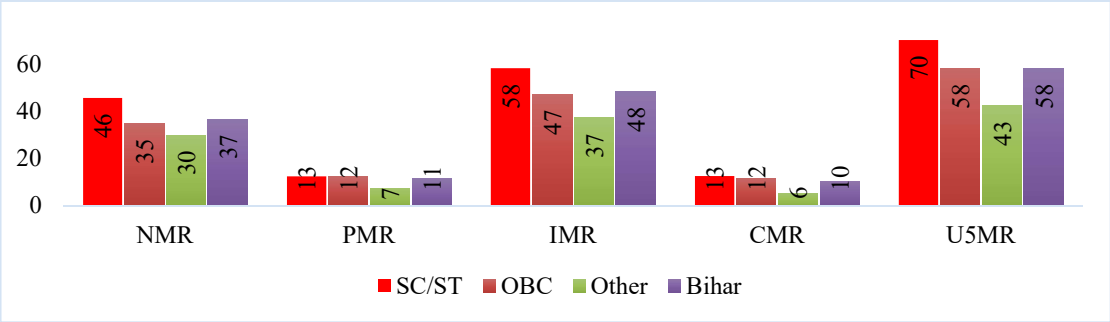
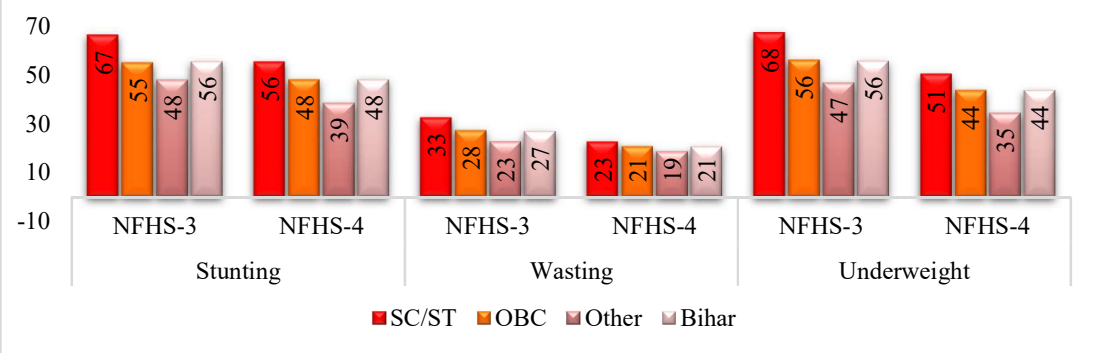


Figure 2: Children below age five years classified as undernourished



II. Data and methods

Data

The data used for this study have been taken from secondary as well as primary sources. A brief description of secondary and primary data used for this study is presented below;

National Family Health Survey

The secondary data was taken from the third and fourth rounds of NFHS for Bihar. It covered SC/ST women living in 38 districts of Bihar. The districts are influencing rapid change in lifestyle. However, the information on children's nutritional status has been collected both in the household included in the district and state modules. Hence, this study has used information obtained from the households included in the state module (about 36,772 households in NFHS-4) to better compare with 3,016 households surveyed in NFHS-3 (IIPS, 2017 and IIPS, 2007).

Primary data

Suitably developed qualitative checklists were used to collect the primary data from stakeholders in the ICDS system working at different levels. Around 22 key-informant interviews (KIIs) have been conducted to generate requisite information for a SWOT analysis of the ICDS programme in the state. For instance, all the 38 districts were classified into three strata by the prevalence of stunting, wasting and underweight among children under five years. One district was

randomly selected from each of the three groups for the key informant interviews with DPOs. Subsequently, Programme Officers Divisional (DPOs) with the available MIS information were approached to share the information about the currently appointed Child Development Project Officer (CDPOs) in the respective district.

After that, two CDPOs were interviewed to collect information about programme performance in different blocks. Thus, a total of six CDPOs were interviewed. At the last stage, two LS/AWW were selected for interviews from the working areas of each of the six CDPOs based on their performance in the last 12 months. Thus, a total of 12 LS/AWW were interviewed with suitably developed checklists pertaining to their role, functions and responsibilities. Three districts are selected based on probability proportional to the district's size sampling. The districts, namely, Madhubani, Patna and Kaimur (Bhabua), were selected to collect in-depth, comprehensive information from the ICDS stakeholders.

Statistical analyses

The secondary data were analysed by using the bivariate statistical technique by STATA. Potential strategies to address SC/ST women and children's nutrition and health in Bihar were analyse by comprehensive SWOT (strengths, weakness, opportunities and threats) analysis of the ICDS programme. After completing the stakeholder's interview, the information has been organized as per the mechanisms of SWOT. SWOT analysis involves the identification of

Strength: Internal attributes and resources that support a successful outcome,
Weaknesses: Internal attributes resources that work against a successful outcome,
Opportunities: External factors the project can capitalize on or use to its advantage, and
Threats: External factors that could jeopardize the programme.

The analysis may consist of three significant steps, namely analysis of the internal and external environment, perform SWOT analysis with the available information and document and suggest a suitable action plan to strengthen the functioning of ICDS in Bihar. It may help to improve the services for women and children from socially deprived groups of SC/ST.

III. Results

ICDS services among SC/ST children under six years

Table 2 represents the percentage of living SC/ST children who have received services from an AWC in different age groups concerning different background characteristics during 2005-06. The ICDS programme provides nutrition and health services for children under six years, pregnant or breastfeeding women and preschool activities for children aged 3-6 years. Only eight per cent of SC/ST children under 0-71 months had availed of services from AWC, whereas the services least likely to be accessed were health check-ups (0.7%) and measurement of weight at AWC (0.5%) in Bihar in 2005-06.

In rural areas, less than one per cent (0.8%) children undersix years received health check-up and 0.3 percent children under five years could access the AWC to measure the weight. The non-availability of a proper infrastructural framework in rural areas might be attributed to such a low percentage of services received by the SC/ST population. Food supplements were provided to three per cent of female children which doubled for their male counterpart (6%). Such sex discrepancy among children under six years isalso observed in availing health check-ups and childhood care and preschool. Muslim children (13%) received ICDS services from AWC higher than Hindus (8%) in NFHS-3. Among the children, the percentage of availing of services were high among those whose mothers had no schooling. The wealth index has a negative correlation with the services received by the children. Children from the poorest wealth quantile were the top receivers of services at 10 per cent, whereas it was 3 per cent for the richer wealth quantile.

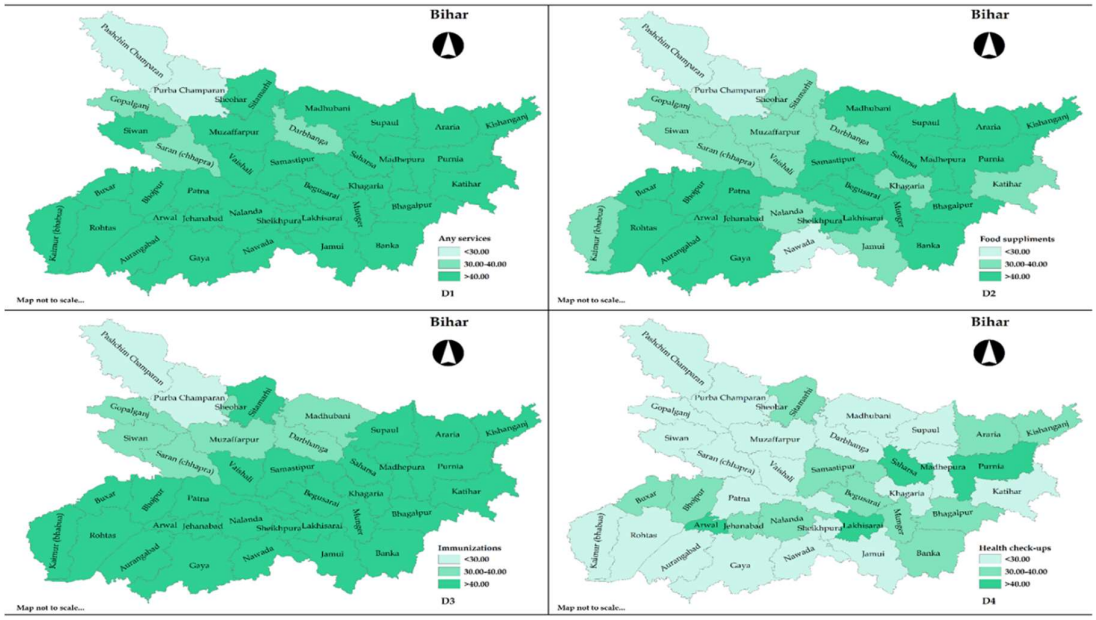
Table 2: Percentage of SC/ST children who received services from AWC at different ages in the last 12 months preceding the survey by background characteristics, Bihar 2005-06.

Background characteristics	Children of different ages who received/went/were at AWC								
	Under 0-71 months					36-71 months		0-59 months	
	Any service	Food supple-ments	Immun-izations	Health check-ups	N	Childhood care & preschool	N	Weighed	N
Type of residence									
Urban	4.2	4.2	3.2	0.0	39	2.0	20	2.6	31
Rural	8.2	4.6	5.7	0.8	538	3.2	257	0.3	451
Sex of child									
Male	9.5	6.2	6.0	1.4	289	4.0	138	0.3	246
Female	6.4	3.0	5.0	0.0	288	2.3	139	0.6	236
Religion									
Hindu	7.9	4.4	5.4	0.7	564	3.0	273	0.3	469
Muslim	12.5	12.5	9.4	0.0	13	10.2	4	6.4	13
Others	ns	ns	ns	ns	ns	ns	ns	ns	ns
Mother's age									
15-24	7.2	1.2	5.2	0.7	210	0.7	63	0.4	197
25-39	9.3	7.2	6.3	0.8	331	4.4	187	0.5	263
40-49	0.0	0.0	0.0	0.0	36	0.0	28	0.0	22
Mother's schooling									
No schooling	9.1	5.1	6.5	0.9	492	3.6	243	0.6	404
<5 years	0.0	0.0	0.0	0.0	22	0.0	9	0.0	20
5-7 years	0.0	0.0	0.0	0.0	27	0.0	9	0.0	26
8-9 years	0.0	0.0	0.0	0.0	13	0.0	5	0.0	12
10-11 years	5.9	5.9	0.0	0.0	23	0.0	11	0.0	20
>12 or more years	0.0	0.0	0.0	0.0	0	ns	ns	0.0	0
Mother's BMI									
Underweight	6.5	3.7	3.2	0.9	299	1.9	148	0.0	257
Normal	10.4	6.1	8.6	0.5	255	5.1	118	1.1	205
Overweight	0.0	0.0	0.0	0.0	7	0.0	4	0.0	5
Obese	0.0	0.0	0.0	0.0	16	0.0	7	0.0	15
Wealth index									
Poorest	9.9	6.0	6.9	1.3	322	3.6	155	0.5	271
Poorer	5.6	2.4	4.0	0.0	172	3.3	84	0.0	138
Middle	9.3	5.0	8.1	0.0	32	2.8	15	2.9	28
Richer	3.1	3.1	0.0	0.0	44	0.0	20	0.0	39
Richest	0.0	0.0	0.0	0.0	7	0.0	3	0.0	6
Birth weight	8.6	4.9	5.9	0.9	482	3.0	182		
Normal	8.8	5.0	6.1	0.9	471	3.0	182	0.5	471
Low birth weight	0.0	0.0	0.0	0.0	11	0.0	0	0.0	11
Birth size°									
Very small	5.8	5.8	5.8	0.0	24	0.0	5	5.8	24
Small	13.4	6.7	6.7	2.2	65	0.0	21	0.0	65
Average or larger	8.1	4.5	5.8	0.7	393	3.6	156	0.2	393
Mass media									
No	7.0	5.5	4.0	0.0	274	3.3	137	1.0	218
Yes	8.8	3.8	6.9	1.4	303	3.0	140	0.0	264
Bihar	8.0	4.6	5.5	0.7	577	3.1	277	0.5	482
Bihar*	8.9	3.9	6.9	0.8	2,826	4.3	1,435	0.7	2,343

Note: ns-no sample available, °average is same as birth weight and *Total for Bihar includes SC/ST, OBC and others

More than 40 per cent SC/ST children under six years in 33 districts received services except few districts like Paschim Champaran, Purba Champaran, Darbhanga, Gopalganj and Saran (Chhapra) (Map 1: D1). By considering health check-up among children, most of the districts are lagging in availing the services at AWCs. The map shows that immunization received by children is less than 30 per cent in few districts like Pashchim, Champaran and Purba Champaran. However, more than two-fifths of SC/ST children have had food supplements in 22 districts (Map 1: D2). Less than 30 per cent of SC/ST children received health check-ups in 22 districts which is the point to be worried about (Map 1: D4).

Map 1: SC/ST children under six years who received different services at AWC, Bihar 2015-16



The percentage of living SC/ST children receiving the services through the ICDS programme increased significantly during 2015-16, as evident from *Table 3*. Most common services that age-eligible children have received were any services (54%), immunization (45%) and food supplements (39%). Services that are least likely to be availed of are health check-ups and weight measurement at AWCs (26% each). Accessibility of services is more in rural areas (54%) than in urban areas (43%). A significant gender gap was seen in receiving services from AWCs and it decreased significantly in NFHS-4 compared with NFHS-3. With increasing mother's age from 15-24 to 40-49, the percentage of children receiving services decreased from 57 per cent to 50 per cent, although the pattern was opposite in NFHS-3. Among the children, the percentage of availing any services decreases with increasing wealth quantile, ranging from 56 per cent to 34 per cent.

ICDS services among SC/ST women during pregnancy and while breastfeeding

More than two-fifths of the mother's avail of services from AWCs during pregnancy, and it reduced to 40 per cent among breastfeeding mothers during 2015-16(Table 4). Among SC/ST children, few mothers received supplementary food (0.1%) during pregnancy in NFHS-3, which increased up to 32 per cent in NFHS-4. Most mothers did not receive services from an AWC in the rural areas (99%) and in urban areas (98%) during pregnancy in the Third round of NFHS. With the betterment of situation during NFHS-4, slightly less than half of the mothers received services (44%) and around 33 per cent mothers during pregnancy received supplementary food in rural areas in NFHS-4. The percentage of women is more in the case of Muslims (72%) who do not receive services from AWCs than Hindus (55%) during pregnancy and the same pattern is followed for breastfeeding mothers in NFHS-4.

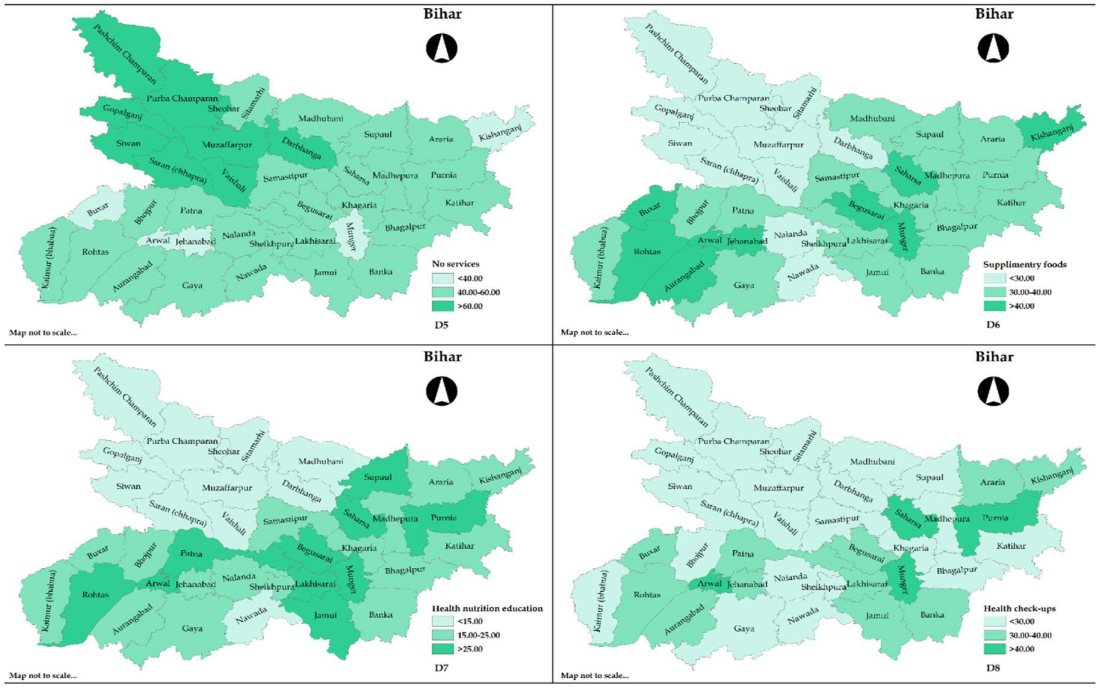
Table 3: Percentage of SC/ST children who received service from AWC at different ages in the last 12 months preceding the survey by background characteristics, Bihar 2015-16

Background characteristics	Children of different ages who received/went/were at AWC								
	Under 0-71 months					36-71 months		0-59 months	
	Any service	Food supple-ments	Immun-izations	Health check-ups	N	Childhood care & preschool	N	Weighed	N
Type of residence									
Urban	42.7	27.6	36.3	14.9	490	30.2	272	18.7	410
Rural	54.3	39.2	45.3	27.0	6,875	36.4	3,409	26.4	5,792
Sex of child									
Male	53.7	38.5	44.7	27.2	3,691	36.1	1,872	27.3	3,091
Female	53.3	38.4	44.7	25.2	3,674	35.8	1,809	24.4	3,111
Religion									
Hindu	55.2	39.6	46.2	27.0	6,777	37.4	3,386	26.6	5,721
Muslim	32.5	24.0	26.6	16.1	580	18.6	290	16.0	474
Others	100.0	100.0	88.2	69.2	8	74.1	5	100.0	7
Mother's age									
15-24	57.3	40.2	49.7	27.2	2,069	38.9	618	27.0	1,946
25-39	52.2	37.7	43.2	26.1	4,915	35.1	2,786	25.4	4,003
40-49	50.0	38.6	37.1	21.9	381	38.7	277	25.4	253
Mother's schooling									
No schooling	54.5	39.6	45.3	27.1	5,086	37.0	2,682	26.7	4,210
<5 years	55.3	36.7	45.1	23.9	455	33.2	214	23.9	385
5-7 years	52.9	36.9	44.4	24.4	642	36.1	293	24.7	552
8-9 years	53.2	39.9	43.8	25.0	482	33.4	206	24.3	438
10-11 years	42.8	31.9	38.8	22.9	336	25.7	138	23.3	290
>12 or more years	49.2	31.2	43.2	24.0	364	34.5	148	23.5	327
Mother's BMI									
Underweight	56.7	40.8	48.1	28.6	2,599	39.6	1,238	28.6	2,221
Normal	53.4	38.4	44.2	25.6	4,359	35.4	2,190	25.0	3,669
Overweight	39.2	29.0	33.2	20.6	308	27.1	197	19.6	239
Obese	27.0	17.8	20.2	14.3	99	14.5	56	12.8	73
Wealth index									
Poorest	55.7	39.9	46.6	27.5	5,288	37.5	2,662	26.7	4,417
Poorer	53.4	39.2	44.1	24.8	1,394	36.3	666	26.2	1,210
Middle	38.2	26.9	32.0	18.5	468	24.6	237	19.6	392
Richer	33.8	23.6	30.6	19.8	173	21.9	98	17.4	149
Richest	33.5	24.8	29.2	17.8	42	24.0	18	15.2	34
Birth weight	55.5	40.2	46.9	27.3	6,202	36.8	2,519		
Normal	55.5	40.0	46.6	27.0	5,724	36.9	2,340	25.7	5,724
Low birth weight	54.1	40.5	48.9	29.6	478	35.4	179	27.5	478
Birth size°									
Very small	49.0	35.2	40.7	22.2	252	30.3	94	20.8	252
Small	54.6	38.5	48.4	28.2	647	38.1	257	26.9	681
Average or larger	56.0	40.7	47.1	27.5	5,303	36.7	2,168	26.3	5,269
Mass media									
No	53.9	38.7	44.6	26.3	4,805	36.6	2,440	25.4	4,004
Yes	52.7	38.0	45.0	26.0	2,560	34.7	1,241	26.7	2,198
Bihar	53.5	38.5	44.7	26.2	7,365	36.0	3,681	25.9	6,202
Bihar*	49.5	34.3	41.1	23.5	28,811	32.8	14,494	23.1	24,214

Note: °Average is same as birth weight and *Total for Bihar includes SC/ST, OBC and others

The facility of availing supplementary food among mothers while breastfeeding is more accessible in the age group 15-24 (34%) than the age group 40-49 (30%) during latest round of survey. Almost fifty-five per cent women of the poorest wealth quantile had not received services during pregnancy. The map shows the percentage of SC/ST children undersix years whose mothers received specific benefits from AWCs during pregnancy. It also shows children whose mothers were not much aware of the services provided to them during pregnancy at AWCs. Most of the districts except Arwal, Saharsa, Purnia and Munger have had health check-ups for mothers at less than 40 per cent (Map 2: D8).

Map 2: SC/ST children under age six years whose mothers received specific benefits from AWC during pregnancy, Bihar 2015-16



Less than one-fourth of the mothers during pregnancy of SC/ST children under six years have ever received health check-ups (23%), and health nutrition education (18%) from AWCs (Table 5). Awareness for health check-up and health nutrition education is prevalent in rural areas. About one-fifth of the mothers availed of health check-up facility during pregnancy and breastfeeding. A negative correlation can be traced between mothers' schooling and understanding of the facilities provided to them during pregnancy and while breastfeeding. Over one-sixth mothers with basic primary education possess a better understanding of all the facilities provided to women during pregnancy and while breastfeeding than their counterparts. Group of mothers belonging to the poorer and the poorest sections of the society has better inclination to the services provided at AWCs for health issues.

A good number of mothers (more than 40%) belonging to a few districts like Buxar, Rohtas, Aurangabad, Arwal, Jehanabad, Begusarai, Saharsa, Kishanganj and Katihar have received supplementary food while breastfeeding (Map 3: D10). Mothers from only Arwal district recorded more than 40 per cent of health check-up while breastfeeding (Map 3: D12).

Table 6 shows the percentage of mothers of SC/ST children who received services during pregnancy and while breastfeeding increased significantly over ten years along with rural-urban differentials. Over half of rural SC/ST children under six years received services from AWCs with immunization (45%), food supplements (39%) being highly preferred services and health nutrition education (18%) for mothers during pregnancy and health check-ups (20%) while breastfeeding being least preferred services in the fourth round of NFHS. A higher share of children received health check-up in rural areas (27%) than their urban counterpart (15%) in 2015-16. Supplementary food received by mothers during pregnancy in the rural areas (33%) increased significantly in the past decade.

Table 4: Percentage of SC/ST children under age six years whose mothers not received services and received supplementary food from AWC during pregnancy and while breastfeeding, Bihar 2005-16

Background characteristics	Mother received from an AWC during pregnancy				Mother received from an AWC while breastfeeding					
	No services		Supplementary food		No services		Supplementary food		N	
NFHS ▶	3	4	3	4	3	4	3	4	3	4
Type of residence										
Urban	98.0	63.2	1.1	26.4	100.0	66.7	ns	26.0	39	490
Rural	99.3	55.6	0.0	32.7	98.8	59.5	ns	31.9	538	6,875
Sex of child										
Male	98.8	56.4	0.1	32.3	98.7	59.8	ns	31.6	289	3,691
Female	99.6	55.8	0.0	32.3	99.1	60.0	ns	31.3	288	3,674
Religion										
Hindu	99.3	54.8	0.0	33.6	98.9	58.7	ns	32.7	564	6,777
Muslim	93.8	71.6	3.1	16.8	100.0	74.3	ns	16.6	13	580
Others	ns	37.6	ns	76.5	ns	50.5	ns	57.4	ns	8
Mother's age										
15-24	98.4	54.1	0.2	35.1	99.4	60.1	ns	33.8	210	2,069
25-39	99.6	56.7	0.0	31.2	98.4	59.8	ns	30.7	331	4,915
40-49	100.0	59.7	0.0	31.2	100.0	61.0	ns	29.6	36	381
Mother's schooling										
No schooling	99.9	54.7	0.1	33.4	99.0	58.9	ns	32.2	492	5,086
<5 years	94.6	57.9	0.0	29.6	100.0	60.6	ns	30.4	22	455
5-7 years	100.0	56.7	0.0	33.2	100.0	60.6	ns	33.1	27	642
8-9 years	100.0	56.6	0.0	31.1	100.0	59.7	ns	32.2	13	482
10-11 years	88.3	62.6	0.0	29.3	94.2	68.0	ns	25.4	23	336
>12 or more years	100.0	64.9	0.0	22.8	100.0	64.9	ns	24.5	0	364
Mother's BMI										
Underweight	99.6	55.2	0.0	33.7	98.3	57.9	ns	33.8	300	2,529
Normal	98.7	55.1	0.2	32.8	99.5	59.5	ns	31.5	255	4,404
Overweight	100.0	70.2	0.0	22.9	100.0	72.8	ns	20.9	6	333
Obese	100.0	79.1	0.0	10.0	100.0	87.3	ns	10.3	16	99
Wealth index										
Poorest	100.0	54.7	0.0	33.8	99.6	58.3	ns	33.2	322	5,288
Poorer	100.0	53.6	0.0	33.1	97.7	59.5	ns	31.3	172	1,394
Middle	97.7	71.0	1.3	20.0	100.0	71.6	ns	21.0	32	468
Richer	90.8	74.5	0.0	16.4	96.9	80.1	ns	14.8	44	173
Richest	100.0	76.5	0.0	15.4	100.0	71.1	ns	16.3	7	42
Birth weight	99.1	54.9	0.1	33.8	98.7	58.9	ns	32.9	482	6,202
Normal	99.6	55.0	0.1	33.7	98.9	59.0	ns	32.7	471	5,724
Low birth weight	75.2	54.2	0.0	32.2	87.6	58.5	ns	34.3	11	478
Birth size°										
Very small	95.1	64.9	0.0	25.1	95.1	71.3	ns	21.7	24	252
Small	97.8	58.7	0.0	30.8	100.0	61.6	ns	31.0	65	647
Average or larger	99.5	53.7	0.1	34.5	98.7	57.8	ns	33.7	393	5,303
Mass media										
No	99.7	54.9	0.2	33.3	99.5	59.2	ns	32.2	274	4,805
Yes	98.7	58.3	0.0	30.4	98.3	61.3	ns	30.3	303	2,560
Bihar	99.2	56.1	0.1	32.3	98.9	59.9	ns	31.5	577	7,365
Bihar*	99.2	62.2	0.3	26.9	99.5	65.4	0.2	26.2	2,826	28,811

Note: ns-no sample available, °average is same as birth weight and *Total for Bihar includes SC/ST, OBC and others. 3 and 4: NFHS-3 & NFHS 4.

Barriers and opportunities of availing ICDS services

1. Strengths of the ICDS scheme

ICDS scheme covers all the 38 districts of Bihar. The services are offered through a network of functional 80,211 AWCs spread over 544 child development projects across the state. After universalization, 10,880 additional/mini AWCs have been sanctioned (ICDS, 2020). These projects are controlled by a District Programme Officer (DPO) for each district and similarly CDPO for each project. Further, the project is divided into sectors and sector supervisors are responsible for supervising and monitoring the service delivery at AWCs. Maximum population of 1,000 is allotted to one trained person to bridge the gap between the person and organized healthcare under this

Table 5: Percentage of SC/ST children under age six years whose mothers received health check-ups and health nutrition education from AWC during pregnancy and while breastfeeding, Bihar 2015-16

Background characteristics	Mother received from an AWC during pregnancy		Mother received from an AWC while breastfeeding		
	Health nutrition education	Health check-ups	Health nutrition education	Health check-ups	N
Type of residence					
Urban	15.1	18.6	11.7	15.6	490
Rural	18.1	23.4	16.6	20.0	6,875
Sex of child					
Male	17.9	23.4	16.5	20.1	3,691
Female	18.0	22.8	16.0	19.4	3,674
Religion					
Hindu	18.8	24.2	17.0	20.6	6,777
Muslim	7.3	10.5	7.5	9.9	580
Others	35.5	7.3	0.0	0.0	8
Mother's age					
15-24	19.6	26.0	17.2	21.5	2,069
25-39	17.3	22.1	15.9	19.1	4,915
40-49	16.5	20.6	15.9	19.0	381
Mother's schooling					
No schooling	18.4	23.3	16.6	19.8	5,086
<5 years	19.2	25.1	17.3	21.4	455
5-7 years	17.9	24.5	17.6	21.3	642
8-9 years	17.7	23.5	15.5	19.2	482
10-11 years	14.2	20.3	12.9	18.1	336
>12 or more years	13.9	17.4	11.5	16.7	364
Mother's BMI					
Underweight	20.0	24.7	18.7	22.4	2,529
Normal	17.5	23.1	15.6	19.0	4,404
Overweight	11.5	16.4	8.6	13.4	333
Obese	2.1	4.1	2.3	5.3	99
Wealth index					
Poorest	18.9	24.2	17.3	20.6	5,288
Poorer	18.3	23.8	15.3	19.2	1,394
Middle	10.7	14.1	10.6	15.1	468
Richer	7.7	10.6	7.5	10.6	173
Richest	11.8	15.0	13.5	15.2	42
Birth weight	18.9	24.5	16.8	20.4	6,202
Normal	18.6	24.2	16.5	20.2	5,724
Low birth weight	18.6	23.5	17.2	20.5	478
Birth size°					
Very small	11.3	14.6	9.0	10.0	252
Small	15.6	22.9	15.0	18.7	647
Average or larger	19.7	25.1	17.4	21.1	5,303
Mass media					
No	18.0	23.6	16.4	19.7	4,805
Yes	17.8	22.2	15.9	19.9	2,560
Bihar	17.9	23.1	16.2	19.7	7,365
Bihar*	15.4	20.1	13.8	16.8	28,811

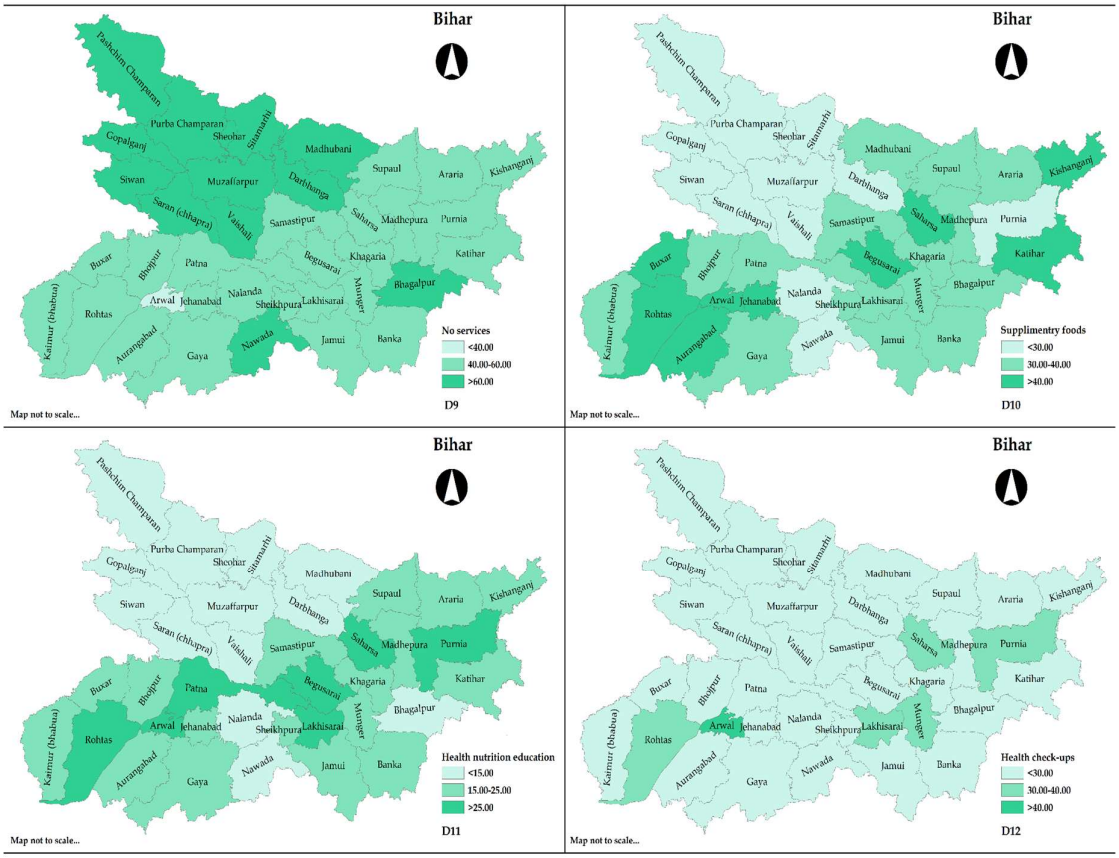
Note: , °Average is same as birth weight and * Total for Bihar includes SC/ST, OBC and others

scheme, mainly focusing on the health and educational needs of children under six years. The AWCs in the state have been established to provide services like immunization and supplementary nutrition to children under six years, care of new-born babies and children under six years, non-formal preschool education to children aged 3-6 years, antenatal care and immunization against tetanus for all the expectant mothers, supplementary nutrition of women who are pregnant and nursing, nutrition and health education, and health check-ups to women aged 15-45 years, postnatal care for nursing mothers, and referral of serious cases of malnutrition or illness to hospital/PHCs/CHC/ hospital.

The schemes/programmes are also planned to create basic infrastructure and assets essential for better suitability of the institution in urban and rural areas. The practical implementation of the ICDS programme depends upon how efficiently available funds and resources are utilized (Nayak &

Saxena, 2006). There is a critical need to start allocating funds towards initiatives that address the issue of malnutrition as opposed to continuing to over-budget for interventions related to food provision and infrastructural development (Mohmand, 2012).

Map 3: SC/ST children under age six years whose mothers received specific benefits from AWC while breastfeeding, Bihar 2015-16.



A targeted approach and convergence-based programme, "POSHAN Abhiyaan" was launched in March 2018 to improve nutritional outcomes for children, adolescents, pregnant women and lactating mothers by leveraging technology. It is expected that the scheme improves the condition and the status of malnourished children which is to decline in the coming days. A wing of the social welfare department, ICDS will be responsible for POSHAN Abhiyaan drive in the state. The state co-ordinator stated that the convergence of different departments is required to fight malnutrition. However, one of the ICDS stakeholder observed about the programme;

> *"Earlier ICDS service system was focused on children aged 3-6 years, but currently the focus is sifting for children aged 0-2 years considering the first 1,000 days of children's life is critical and equally window of opportunity to prevent malnutrition and ensure optimum cognitive development of each child. The strategy for addressing malaise of under nutrition through the life cycle approach and focus will be given on adolescent girls, pregnant and lactating mother and children aged 0-3 years. It includes nine months of pregnancy, six months of exclusive breastfeeding, and the period from six months to two years to ensure focused intervention to achieve nutrition outcome."*
>
> A Stakeholder

Table 6: Percentage of living SC/ST children whose mothers received services during pregnancy and while breastfeeding from AWC in the last 12 months preceding the survey with urban-rural differentials, Bihar, 2005-16.

Services utilization	Urban		Rural		Bihar	
NFHS►	3	4	3	4	3	4
Children under age six years						
Any service	4.2	42.7	8.2	54.3	8.0	53.5
Food supplements	4.2	27.6	4.6	39.2	4.6	38.5
Immunizations	3.2	36.3	5.7	45.3	5.5	44.7
Health check-ups	0.0	14.9	0.8	27.0	0.7	26.2
Childhood care & preschool for 36-71 months	2.0	30.2	3.2	36.4	3.1	36.0
Mothers during pregnancy						
Any service	2.0	36.8	0.7	44.4	0.8	43.9
Supplementary food	1.1	26.4	0.0	32.7	0.1	32.3
Health and nutrition education	ns	15.1	ns	18.1	ns	17.9
Health check-ups	ns	18.6	ns	23.4	ns	23.1
Mothers during breastfeeding						
Any service	0.0	33.3	1.2	40.6	1.1	40.1
Supplementary food	ns	26.0	ns	31.9	ns	31.5
Health and nutrition education	ns	11.7	ns	16.6	ns	16.2
Health check-ups	ns	15.6	ns	20.0	ns	19.7

Note: ns-no sample available

2. Major issues (weakness) in the functioning of ICDS scheme

A female voluntary community-based frontline worker is the key person for providing the services at AWCs. As a stakeholder, the performance and profile (level of educational qualifications, training, skills, etc.,) are linked to the ultimate outcome of the ICDS scheme (Baliga & Walvekar, 2017). It has been pointed out through numerous studies that there is lack knowledge of nutritional components of food, 42 per cent of AWWs were not aware of the basics of ICDS (Kant et al., 1984). The fundamental goal of any schemes/programme is to improve the quality of life, remove poverty, economic inequality and human deprivation.

A large number of people are suffering from hunger, malnutrition, and problem with survivorship. These situations arise because of poverty, food scarcity, shortage of agriculture land, social discrimination, seasonal agricultural work, and a flawed public distribution system (WFP, 2015). In India, the nutritional condition is profoundly worse among the scheduled caste/schedule tribe as compared to another caste, where women and children are helpless (NSSO, 2013). The SC/ST mothers did not receive any services from an AWC in the rural areas (99%) than in urban areas during pregnancy in the 3rd round of NFHS. With the betterment of the situation during NFHS-4, slightly less than half of the mothers receive services (44%) and around 33 percent of children whose mothers receive supplementary food from an AWC during pregnancy in rural areas (Table 4).

A similar finding was noted in other studies, poor awareness is translated into poor utilization, where awareness and utilization of Anganwadi services, aside from supplementary nutrition, were abysmally low, compared to NFHS–4, just over two-third (67%) of pregnant women and 60 percent of lactating mothers in rural Karnataka had received health check-ups at the AWCs (IIPS, 2017). However, the correlation between tribal areas and high malnutrition levels was reported by The Hindu newspaper. Undoubtedly, an egg is a major source of protein which is cheap and can be procured locally. For three times a week, an egg for each will be suggested to children and the women at centres in the tribal blocks by the principal secretary, WCD (The Hindu, 2019).

It is also highlighted that in rural areas near Kochi, Kerala, awareness regarding anganwadi services was low and only 19 per cent pregnant and lactating mothers utilized any of the anganwadi services (Francis & Paul, 2017). The present scenario of the AWCs has supported the statement given by one of the stakeholders of Bihar state:

"There is a total of 114,718 sanctioned AWCs in Bihar of which 106,899 are functional. Only 26,097 are running at their own (government) buildings. In convergence with the Department of Rural Development under MGNREGA, 1,000 AWCs are proposed every year for construction. Nevertheless, the slothful process and under-utilization of funds delay the construction of AWC's buildings in the state. Thus, the children in the state have been deprived of their rights of early learning and development due to the slow pace of construction. Buildings should be constructed as learning aid and design should be child-friendly. The technical core committee already formed at ICDS Directorate could provide consultation."

A Stakeholder

It suggests that the public distribution system is not working properly, or lacks food purchase capacity which may be the primary cause of hunger and malnutrition (Kattumuri, 2011). Furthermore, most of the existing AWCs across India lack basic infrastructure like clean drinking water, hygienic toilets and kitchens (Kapur, 2013).

The findings of the study may be pivotal to focussing at most vulnerable districts, plan individual and community nutrition interventions, and allocate resources effectively. The Hindu reported a major calamity. In Bihar's Muzaffarpur district, fingers were pointed at the litchi when over 150 children died of Acute Encephalitis Syndrome (AES) in June, 2019.

3. Opportunities of ICDS scheme

The ICDS was designed to address the multidimensional causes of malnutrition. As the programme has expanded to reach more and more villages, it has remarkable potential to impact positively the well-being of the women and children who are eligible for participation. The key constraint of its effectiveness is that its actual implementation deviates from the original design. There has been an increasing emphasis on the provision of supplementary feeding and preschool education to children aged 4-6 years at the expense of other modules crucial for combating persistent undernutrition. Thus, most children under three, the group that suffers most from malnutrition, are unreachable and most of their parents do not receive counselling on better feeding and child care practices.

The central government is responsible for programme planning and operating costs, while state governments are liable for programme implementation and providing supplementary nutrition out of their own resources (Profile, 2004). The expenditure for running ICDS is currently met from three broad sources. First, the funds provided by the centre under "general ICDS"to meet expenditures on account of infrastructure, training, salaries of ICDS staff, preschool learning kits, basic medical equipment, etc. The second source is what the states allocate under their particular budgets to make available supplementary nutrition. The third is the funds given under the PMGY as additional central assistance, technically to be used to provide monthly THR to children in the 0-3 year's age group living below the poverty line and needing additional supplementation (The Commissioner of the Supreme Court, 2004). Currently, the ICDS services are being provided to about 4.2 crore beneficiaries, including 3.4 crore children below six years with a network of about 6.4 lakh AWCs (Profile, 2004). Various states (including Chhattisgarh, Goa, Haryana, Himachal Pradesh, Karnataka, Manipur, Nagaland, Odisha and Tamil Nadu) have achieved complete operationalization of sanctioned ICDS projects (Profile, 2004). The basic infrastructure is a primary need of the scheme:

"The building construction of AWCs are very much needed. Around 150 AWCs buildings are constructed using the funds raised through the convergence of MGNREGA, but the construction is not completed yet. The DM and DPO of the district Madhubani take collective initiative, but it is in the under process. Moreover, for the real-time monitoring, ICDS-CAS functions through a mobile application at the level of anganwadi workers and sector supervisors and a comprehensive web-based dashboard at block, district, state and national levels providing real-time information about service

delivery. The state establishes a system where the programme functionaries, especially at the field-level, will become more efficient by learning to plan and execute each task correctly and consistently through an Incremental Learning approach. Twenty-one such thematic modules are under progress of rolling out."

A Stakeholder

4. Threats of ICDS scheme

Due to the present situation, the CDPOs must inspect the centres under their jurisdiction every month several times. It is not being detected for supervision or vehicles. Sometimes, even when there are vehicles, these are requisitioned for law and order or stay idle for want of timely release of maintenance funds. The problem of "supervision in absentia" or the complete absence of supervision emerges when one looks at the registers of the AWCs. Unfortunately, Anganwadi registers frequently reveal that the weight of children is not recorded properly. Further, there is no understanding of how to check whether malnutrition has decreased or increased. In support of the sentence, it is indispensable to investigate the following statement;

"Ambiance of the Anganwadi centres is not up to the mark and requires quality improvement. Children are reading in misery without basic amenities, poor light inside and hot and humid conditions. If the AWCs get basic amenities, children would be highly attracted to join the schools. Provision of electricity will allow workers to take audio and video classes under pre-schooling. There are 4,210 sectors in the state, but approximately around 50 per cent of the positions are vacant, which adversely affects the quality of service. However, the state has initiated the process of recruitment of this position and it is in progress. Currently, provision of DFS is restricted to the Hot Cook Meal plan at AWC in Tirhiut division, which needs to be scaled up. In the current situation, pregnant and lactating mothers are not getting DFS due to the unavailability and un-accessibility."

A Stakeholder

SWOT matrix: The analysis is based on the strategic opportunity window model

Strategic analysis (Internal environment / External environment)	S	W
	• Existing services for children and women • Launching of POSHAN Abhiyaan • Focussing first 1,000 days of children • Convergence based infrastructural development	• Inadequate screening and testing of children's health • Failure to monitoring and evaluation of a programme • Poor distribution system • Social discrimination • Slothful process and under-utilization of funds
O	SO	WO
• Strengthen the convergence-based program at the ground level • Use of Nutrometer to access the overall development of children • POSHAN tracker • Integration of AYUSH	• Infrastructural development of services • Use of Common Application Software (CAS) • Increasing of awareness	• Inadequate collaborations of Department of Rural Development • Complete operationalization of sanctioned ICDS projects • Allocation of budget to provide supplementary food
T	ST	WT
• Vulnerability of frontline workers • Overburden of filling of the 4 registers on regular basis about services provide • Community participation, involvement of a male member of the family • Inadequate involvement of Panchayati Raj	• The poor condition of AWCs • Social and ecological factors • No extra support available to socially deprived group • Lack of knowledge of nutritional component among frontline workers	• Awareness of programme at the grassroots level • Regulate and ensure salary disbursement at monthly basis • Deficient manpower

IV. Discussion and Conclusion

Undernutrition is a health outcome and a risk factor for disease and can upsurge both morbidity and mortality. However, it is rarely the direct cause of death (except in extreme situations like famine). Malnutrition is thus a primary obstacle to the development process itself. It is the source of foremost waste of resources and lost productivity because malnourished children are physically and intellectually less productive as adults (Gillespie & Haddad, 2001). The primary need must be fulfilled at the ground level.

Only nine per cent children aged 0-71 months had availed of any services from AWC, whereas the health check-up (0.7%) and measurement of weight at AWC (0.5%) services were least likely to be accessed in Bihar (2005-06), while, it improved significantly in five-six folds in the latest round of the survey. The SC/ST mothers did not receive services from an AWC in the rural areas (99%) during pregnancy in the third round of NFHS. With the betterment of situation during 2005-15, over two-fifths of the mothers received services (44%) and around 33 per cent of mothers of eligible children received supplementary food in rural areas. One-fifth mothers with basic primary education possess a better understanding of all the facilities provided to women during pregnancy and breastfeeding than their counterparts. The group of people belonging to the poorer and the poorest sections of the society has a better inclination to the services provided by AWCs for health issues.

The situation during 2005-15, over two fifths of the mothers received services (44%) and around 33 percent of mothers of eligible children received supplementary food in rural areas. Since, the major goal of SDG, which is to fund hunger and ensure access of food by all people, in particular, FAO, IFAD, UNICEF, WFP & WHO (2017) say that the poor and people in vulnerable situations, including infants, to safe nutritious and sufficient food all year round by 2030 is not seems to be possible for India without putting astonishing efforts. One-fifth of mothers with basic primary education possess a better understanding of all the facilities provided to women during pregnancy and while breastfeeding than their counterparts. The group of people belonging to the poorer and the poorest sections of society has a better inclination to the services provided by AWCs for health issues. The study by Islam et al., 2018, Mistry S.K. et al., 2019 and Shrimptom R. et al., 2001 also ratifies the findings of, earlier studies, which found that maternal education is strongly linked with child nutrition.

The atmosphere of the AWCs is not up to the mark and requires quality improvement. Poor registration in them is not only due to lack of infrastructures but also to cultural and ecological factors. Children are reading in misery without basic amenities, poor light inside and hot humid conditions. If the AWCs get basic amenities, children would be more attracted to join them.

The present situation can be imagined by taking a snapshot of Fig. 3. With the provision of electricity, workers would be able to take audio and video classes under pre-schooling. Intervention for nutrition requires multi-sectoral attention and, therefore NNM ensures convergence of all line departments' nutrition related-schemes: planning and development, finance, social welfare, health, education, rural development, Panchayati Raj, POSHAN tracker, Nutrometer, integration of AYUSH, PHED and food safety, and consumer protection.

References

Baliga, S. S., & Walvekar, P. R. (2017). A study on knowledge of anganwadi workers about integrated child development services at three urban health centers. Int J Community Med Public Health, 4(9), 3283-7.

Center on the Developing Child at Harvard University (2011). The foundations of lifelong health are built in early childhood. Available at: www.developingchild.harvard.edu.

Deaton, A., & Dreze, J. (2008). Nutrition in India: Facts and interpretations. *Economic and Political Weekly, 44*(7), 42-65.

Francis, P. T., & Paul, N. (2017). Utilization of anganwadi services in rural population of Kerala. *Indian Paediatrics, 54*(1), 65-6.

Gillespie, S., & Haddad, L. (2001). Attacking the double burden of malnutrition in Asia and the Pacific. Asian Development Bank.

ICDS, B. (2020). Integrated Child Development Services. Government of Bihar. Available on: http://www.icdsbih.gov.in/AboutUs.aspx.

IIPS, I. (2017). National Family Health Survey (NFHS-4), 2015–16. International Institute for Population Sciences (IIPS), Mumbai, India.

IIPS, O. (2007). National Family Health Survey (NFHS-3), 2005-06: India. Vol. I. Mumbai: International Institute for Population Sciences.

Islam, M. M., Sanin, K. I., Mahfuz, M., Ahmed, A. S., Mondal, D., Haque, R., & Ahmed, T. (2018). Risk factors of stunting among children living in an urban slum of Bangladesh: findings of a prospective cohort study. *BMC Public Health*, 18, 1-13.

Kant, L., Gupta, A., & Mehta, S. P. (1984). Profile of anganwadi workers and their knowledge about ICDS. *The Indian Journal of Paediatrics*, *51*(4), 401-402.

Kapil, U., & Pradhan, R. (1999). Integrated child development services scheme and its impact on nutritional status of children in India and recent initiatives. *Indian Journal of Public Health, 43*(1), 21-25.

Kapur, A. (2013). Integrated Child Development Services (ICDS): Budget Briefs 2013-14. *Budget Briefs,* 5(6), March 2013. New Delhi: Centre for Policy Research.

Kattumuri, R. (2011). Food security and the targeted public distribution system in India. *Asia Research Centre Working Paper 38*, London: London School of Economics.

Prasanna Kumar. K. L., Sujatha. B., & Subba Reddy. S. V. Quality management in anganwadi centers Services in consumer perspective". *International Journal of Management and Development Studies*, 3(3), pp. 33-37. doi:10.53983/ijmds.v3i3.82.

Knudsen, E. I., Heckman, J. J., Cameron, J. L., & Shonkoff, J. P. (2006). Economic, neurobiological, and behavioral perspectives on building America's future workforce. *Proceedings of the National Academy of Sciences, 103*(27), 10155-10162.

Ministry of Human Resource Development (HRD), Department of Women and Child Development (DWCD), Government of India (2005). Quick Review of Working of ICDS in Rajasthan. New Delhi: DWCD.

Mistry, S. K., Hossain, M. B., Khanam, F., Akter, F., Parvez, M., Yunus, F. M., ... & Rahman, M. (2019). Individual-, maternal-and household-level factors associated with stunting among children aged 0–23 months in Bangladesh. *Public Health Nutrition, 22*(1), 85-94.

Mohmand, S. K. (2012). Policies without politics: analysing nutrition governance in India. Brighton, UK: Institute of Development Studies.

Nayak, N., & Saxena, N. C. (2006). Implementation of ICDS in Bihar and Jharkhand. *Economic and Political Weekly*, 3680-3684.

NSSO (2013). National Sample Survey Organization report on perceived adequacy of food consumption in Indian household. Available on: http://mospi.nic.in/Mospi_New/upload/nss_report_547.pdf.

Profile, I. N. (2004). Department of Women and Child Development. Ministry of Human Resource Development, Government of India, Government of India Press, New Delhi, 216-226.

Ranade, V. V. (1990). Drug delivery systems: 3A. Role of polymers in drug delivery. *The Journal of Clinical Pharmacology, 30*(1), 10-23.

FAO, IFAD, UNICEF, WFP and WHO. (2017). *The state of food security and nutrition in the World 2017. Building resilience for peace and food security*. Rome, FAO

Shrimpton, R., Victora, C. G., de Onis, M., Lima, R. C., Blossner, M., & Clugston, G. (2001). Worldwide timing of growth faltering: implications for nutritional interventions. *Pediatrics, 107*(5), e75-e75.The Commissioner of the Supreme Court, I. (2004). Fifth Report of CWP 196/2001.

The Hindu (2019). Bihar deaths: Eggs in anganwadis on the anvil. Available on: https://www.thehindu.com/news/national/other-states/eggs-in-anganwadis-on-the-anvil/article30408617.ece.

The Hindu (2019). Bihar deaths: The great Indian survey trick. Available on: https://www.thehindubusinessline.com/blink/know/bihar-deaths-the-great-indian-survey-trick/article28402426.ece

UNICEF, WHO. World Bank: levels and trends in child malnutrition; UNICEF/WHO/World Bank Group joint child malnutrition estimates: key findings of the 2017.

WFP (2015). World Food Programme. Available on http://www.wfp.org/.