# **Original Research Article**

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# A cross sectional study to assess the infrastructure and logistics available at Anganwadi centres in a rural area

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#### **ABSTRACT**

**Background:** ICDS is running from about last four decades in our Country sponsored by Central Government. For achievements of ICDS objectives Anganwadi Centres need to be well equipped in infrastructure and logistics as they are the main source of services provided under ICDS. To find out available infrastructure and logistics at Anganwadi Centers (AWCs), to study the bio-social profiles of Anganwadi Worker (AWWs) and to assess the factors affecting the organizing 'matriya samiti' meeting by AWWs at AWCs.

**Methods:** A cross sectional observational study conducted in a rural area of district Bareilly in 22 Anganwadi Centres selected by multi-stage sampling technique. Selected Anganwadi Centres were visited and selected Anganwadi workers and beneficiaries were interviewed.

**Results:** Majority of AWCs were having pucca type of construction but only 18% were having toilet facility. 60% of AWCs were having regular supply of supplementary nutrition, 72% of AWCs do not have any cooking utensils, around 55% were having growth charts, only 32% were having complete non formal pre-school education kit, less than 40% were having complete medicine kit and only 13% were having referral slips.

**Conclusions:** Most of the AWCs were not having adequate infrastructure and logistics as requires.

Keywords: Anganwadi centres, Anganwadi workers, Infrastructure, Logistics

#### **INTRODUCTION**

The first six years of a child's life are most crucial as the foundations for cognitive, social, emotional, physical, motor and psychological development are laid at this stage. As per census of India 2011, there are 158.78 million children below six years of age, and many of them have inadequate access to health care, nutrition, sanitation, child care, early stimulation, etc.<sup>1</sup>

To ensure that all young children, even those from vulnerable sections of society have access to their basic rights, Integrated Child Development Services (ICDS) Scheme was launched on 2 October, 1975-the 106th birth anniversary of Mahatma Gandhi-the Father of the Nation to provide a package of services to ensure their holistic development.

ICDS is the most unique programme for early childhood care and development encompassing integrated services for development of children below six years, expectant and nursing mothers and adolescent girls living in the most backward, rural, urban and tribal areas.<sup>2</sup>

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The programme provides a well-integrated package of services through a network of community-level Anganwadi centres (AWC). The Anganwadi, literally means a courtyard play centre, located within the village itself.<sup>3</sup> An AWC is the focal point of delivery of ICDS services accommodating up to 40 children during day time. In order to discharge the functions effectively, the AWCs require basic infrastructure. An AWC must have a separate sitting room for children/women, separate kitchen, store for storing food items, child friendly toilets, separate space for children to play (indoor and outdoor activities) and safe drinking water. The Anganwadi Worker (AWW) is the main functionary of the centre and there is also an Anganwadi Helper (AWH) to assist the worker.<sup>4</sup>

AWW maintains all files and records of services provided and growth of the children and submit the report every month to Mukhya Sevika, who is the full time worker and supervises the work of 20, 25 and 17 AWW in urban, rural and tribal projects respectively. She visits each Anganwadi at least once a month, and coordinates with lady health visitor in nutritional and health activities.<sup>5</sup>

#### Aim and objectives

- To find out available infrastructure and logistics at Anganwadi Centers (AWCs).
- To study the bio-social profiles of Anganwadi Worker (AWWs).
- To assess the factors affecting the organizing 'matriya samiti' meeting by AWWs at AWCs.

#### **METHODS**

The present cross-sectional observational study was conducted at Anganwadis in rural block of Bareilly district. The entire Bareilly district was covered under ICDS. There are total fifteen functioning ICDS blocks. One rural block (Bhojipura) was selected randomly for present study. There are 156 Anganwadi Centres (AWCs) in Bhojipura block, out of this 22 Anganwadi Centres which are under field practice area of rural health training centre of Shri Ram Murti Smarak Institute of Medical Sciences are selected for the study. All the AWCs were visited, infrastructure and logistics were assessed and their respective Anganwadi workers were interviewed.

## RESULTS

Table 1 shows that majority of AWCs were having pucca type of construction (63.6%) and were running in primary school building. All the AWCs were having class rooms but most of the AWCs (54.5%) do not have the facility of kitchen and 17 out of 22 AWCs have no store room. Only 18.2% of AWCs have toilet facility. Electricity is not present at any AWCs.

Table 1: Distribution of Anganwadi centres according to Infrastructure facilities (n=22).

Type of facility	Number (%)			
Type of construction				
Pucca	14 (63.6)			
Semi-pucca	08 (36.4)			
Type of Building				
Own building	08 (36.4)			
Primary School	14 (63.6)			
Class room				
Present	22 (100.0)			
Absent	00 (00.0)			
Separate closed kitchen				
Present	10 (45.5)			
Absent	12 (54.5)			
Store				
Present	5 (22.7)			
Absent	17 (77.3)			
Toilet				
Present	4 (18.2)			
Absent	18 (81.8)			
Electricity				
Present	00 (00.0)			
Absent	22 (100.0)			

Table 2 shows that regarding supply of supplementary nutrition it was seen that 13 out of 22 AWCs have adequate supply whereas rest have inadequate supply. Most of the AWCs (72.7%) did not have cooking utensils but majorities (72.7%) had water storage 43 container. Growth charts were available in 12 out of 22 AWCs and out of which growth charts were maintained for all beneficiaries in 8 AWCs and they were not maintained in rest 4 AWCs. Preschool education kit was available at 20 AWCs but it was complete in 7 AWCs only. 19 out of 22 AWCs had medicine kit but it was complete in only 8 AWCs. Referral slips were available at 3 AWCs.

Table 3 reveals that 18 out of 22 AWCs had immunization registers, out of which 12 centres had complete registers and rest 6 had incomplete registers. Survey register was available at 19 AWCs, out of which 14 had completely maintained, Poshahar register was available at 20 AWCs, out which 15 had completely maintained it, Stock register was available at 17 AWCs, and out of which 13 centres had completely maintained the registers.

Table 4 shows that 16 AWCs had baby weighing machine and among these 12 centres had in working condition, it was followed by Salter weighing machine which was available in 13 centres and out of which 5 AWCs had in working condition and adult weighing machine were present in 12 AWCs with 8 centres having in working condition.

Table 2: Distribution of Anganwadi centres based on availability of logistics (n=22).

Type of facility	Number (%)
Supply of supplementary food	
Adequate	13 (59.1)
Inadequate	09 (40.9)
Cooking utensils	
Available	06 (27.3)
Not Available	16 (72.7)
Water storage container	
Available	16 (72.7)
Not Available	06 (27.3)
Growth charts	
Available	12 (54.5)
Not Available	10 (45.5)
If available	
Maintained	08 (66.7)
Not maintained	04 (33.3)
Non formal preschool education	on kit
Available	20 (90.9)
Not Available	02 (9.1)
If available	
Complete	07 (35.0)
Not complete	13 (65.0)
Medicine kit	
Available	19 (86.4)
Not Available	03 (13.6)
If available	
Complete	08 (42.1)
Not complete	11 (57.9)
Referral slips	
Available	03 (13.6)
Not Available	19 (86.4)

Table 5 shows predominantly the AWW were in the age group of 30 to 40 years (45.5%), followed by in the age group of more than 40 years (31.8%) and then in the age group of less than 30 years (22.7%). Majority of AWW were married (81.8%) and only 3 were unmarried and one was widow. Out of the 22 AWW 18 belong to Hindu community whereas 4 belong to Muslim community. Most of the AWW were belonging to other backward class (59.1%), percentage belonging to Schedule caste and General were 27.3% and 13.6% respectively. Regarding education most of AWW were graduate and above (54.6%), followed by educated up to high school (18.2%) and those educates up to middle and intermediate were 13.6% each. AWW belonging to Class 3 socio economic status were 63.6% and rests belonging to Class 2 Socio economic status were 36.4 %.

Table 6 shows in the present study it was seen that 19 out of 22 AWW received training after selection out of which 13 AWW received training for period of 30 days and rest 6 AWW received training for more than 30 days. Majority of AWW had experience of 6 to 10 years (86.4%) and rest had experience of 1 to 5 years, most of the AWW (63.4%) spend 4 hours or more at AWC and rest use to spend 2 to 3 hours. Regarding organizing

'matriya samiti' meeting and 'Village Health and Nutrition Day' 12 AWW had organized once a month, 6 AWW had organized once in 2 or more months and 4 had never organized. As far as village survey is concerned 16 AWW had conducted two surveys in last one year, 3 AWW had conducted only 1 survey and 3 AWW had not conducted any survey in last one year.

Table 3: Distribution of Anganwadi centres according to availability of registers (n=22).

Type of Registers	Number (%)			
Immunization register				
Available	18 (81.8)			
Not Available	04 (18.2)			
If available (n=18)				
Complete	12 (66.7)			
Not complete	06 (33.3)			
Survey register				
Available	19 (86.4)			
Not Available	03 (13.6)			
If Available (n=19)				
Complete	14 (73.7)			
Not complete	05 (26.3)			
Poshahar register				
Available	20 (90.9)			
Not Available	02 (9.1)			
If available (n=20)				
Complete	15 (75.0)			
Not complete	05 (15.0)			
Stock register				
Available	17 (77.3)			
Not Available	05 (22.7)			
If available (n=17)				
Complete	13 (76.5)			
Not complete	04 (23.5)			

Table 4: Distribution of Anganwadi centres based on availability of weighing machines (n=22).

Type of weighing machine	Number (%)		
Adult weighing machine			
Available	12 (54.5)		
Not Available	10 (45.5)		
If available (n=12)			
Working	08 (66.7)		
Not working	04 (33.3)		
Baby weighing machine			
Available	16 (72.7)		
Not Available	06 (27.3)		
If available			
Working	12 (75.0)		
Not working	04 (25.0)		
Salter weighing machine			
Available	13 (59.1)		
Not Available	09 (40.9)		
If available			
Working	05 (38.4)		
Not working	08 (61.6)		

Table 5: Biosocial profile of AWWs.

Characteristics	Number (%)
Age (in years)	·
<30	05 (22.7)
30 to 40	10 (45.5)
>40	07 (31.8)
Marital status	
Married	18 (81.8)
Unmarried	03 (13.6)
Widow	01 (4.5)
Religion	
Hindu	18 (81.8)
Muslim	04 (18.2)
Caste	
General	03 (13.6)
Other Backward Class	13 (59.1)
Schedule Caste	06 (27.3)
Education	
Middle	03 (13.6)
High school	04 (18.2)
Intermediate	03 (13.6)
Graduate and above	12 (54.6)
Socio economic status	
Class II	08 (36.4)
Class III	14 (63.6)

Table 6: Distribution of AWWs based on work profile.

Characteristics	Number (%)			
Training after selection				
Received	19 (86.4)			
Not received	03 (13.6)			
Period of training (n=19) in days				
30	13 (68.4)			
>30	06 (31.6)			
Experience in years				
1 to 5	03 (13.6)			
6 to 10	19 (86.4)			
Hours spent at AWC				
2 to 3	10 (45.5)			
4 or more	12 (54.5)			
Organized 'matriya samiti' m	eeting			
Once a month	12 (54.5)			
Sometimes or never organized	10 (45.5)			
Organized VHND*				
Once a month	12 (54.5)			
Sometimes or never organized	10 (45.5)			
Village survey in last year				
0	03 (13.6)			
1	03 (13.6)			
2	16 (72.7)			

<sup>\*</sup>Village Health and Nutrition Day

Table 7 shows that factors like age, marital status, religion and caste had no influence on organizing 'matriya samiti' meeting by AWW, where factors such as education, socio economic status, training after selection, experience and hours spent at AWC had been found to be associated with organizing 'matriya samiti' meeting by AWW as the 'p' value came out to be statistically significant in these factors. Among these factors, 'hours spent at AWC' had been found to be highly associated as the 'p' value came out to be highly significant (0.003).

Table 7: Factors affecting the organizing 'matriya samiti' meeting by AWWs at AWCs.

Organizing 'matriya samiti' meeting			D.		
Factors	Once montl	a h or no	etimes ever nized	Value*	P value
Age (years)					
<30	2	3			
30 to 40	6	4		0.15	0.7
>40	4	3			
Marital status					
Married	10	8			
Unmarried	1	2		0.24	0.5
Widow	1	0			
Religion					
Hindu	10	8		0.04	0.0
Muslim	2	2		0.04	0.8
Caste					
General	2	1			
OBC	5	8		0.37	0.17
Schedule Caste	5	1			
Education					
Up to High school	1	6		0.48	0.01
Intermediate & above	11	4			
Socio economic	status				
Class II	2	6		0.40	0.03
Class III	10	4		0.40	0.03
Training after selection					
Received	12	7		0.39	0.04
Not received	0	3			
Experience in years					
1 to 5	0	3		0.20	0.04
6 to 10	12	7		0.39	
Hours spent at AWC					
2 to 3	2	10		0.52	0.002
4 or more	8	2		0.53	0.003
*Contingency coefficient, p<0.05 is significant, OBC=Other					

<sup>\*</sup>Contingency coefficient, p<0.05 is significant. OBC=Other Backward Class

## DISCUSSION

In the present study it was seen that majority of AWCs were having pucca type of construction (63.6%). Similar

results were found in a report published by National Institute of Public Cooperation and Child Development (NIPCCD) in 2006 where also majority (75%) of AWCs were found to be having pucca type of construction. A report published by NIPCCD in March 2003 also observed that majority (71.2%) of the AWCs was running in pucca buildings.<sup>6,7</sup>

The present study showed that majority of AWCs were running in primary school building (63.6%) and rest in owned ICDS buildings (36.4%). Similar findings were found in evaluation report on ICDS volume 1 published by Programme Evaluation Organisation, Planning Commission, Government of India in March 2011 which showed that majority of AWCs in Uttar Pradesh were running in Primary School (70.2%), it also revealed that 42.5% of AWC had their own building. Similar results were also seen in study conducted by Madhavi et al in 2011 which found that majority of AWCs were running from government buildings (73.3%).

In the present study it was revealed that all the AWCs had class room for indoor activities. On the contrary it was seen in the report of the Comptroller and Auditor General of India in 2012-2013, 39.8% of AWCs had no space for indoor activities. <sup>10</sup> The present study has shown that storage facility were present in 22.7% of AWCs. Almost similar results were seen in study conducted by Haque et al that storage facility was present in 29% of AWCs. <sup>11</sup>

In our study it was found that predominantly the AWW were in the age group of 30 to 40 years (45.5%). Majority of AWW were married (81.8%), regarding education most of AWW were graduate and above (54.6%). Similar findings were seen in evaluation report of ICDS by Economic & Statistical Adviser Planning Department in Haryana in 2007 that majority of AWW were in the age group 31 to 40 years (58%). The evaluation report on ICDS volume 1 published by Programme Evaluation Organisation, Planning Commission, Government of India in March 2011 also showed the similar results that most of the AWWs were in the age group 28-49 years and majority were found to be married (83.8%), in Uttar Pradesh the average age of AWWs being 39 years with majority of them were married (83.5%).

Our study showed that 86.4% of AWW had received training after selection, majority of AWW had experience of 6 to 10 years (86.4%) and rest had experience of 1 to 5 years, most of the AWW (63.4%) spend 4 hours or more at AWC and rest use to spend 2 to 3 hours.

Similar results were seen in a report published by National Council of Applied Economic Research in 2001 that about 84% of the functionaries had received training and most of them spend 4 hours a day at AWCs. <sup>13</sup> Similar findings were seen in a study conducted by Thakare et al in 2011 which showed that majority (82.14%) of AWWs had an experience of more than 10 years. <sup>14</sup>

#### **CONCLUSION**

The infrastructure and logistics are not yet upto mark in the selected AWCs, majority of AWCs were having pucca type of construction (63.6%) and were running in primary school building, most of the AWCs (54.5%) do not have the facility of kitchen and 17 out of 22 AWCs have no store room. Only 18.2% of AWCs have toilet facility. Electricity is not present at any AWCs. The supply of supplementary nutrition was adequate in only 60% of AWCs, very few AWCs have referral slips and complete medicine and non-formal pre-school education kit.

#### Recommendations

Sanctioning of own buildings for Anganwadi centres for those AWCs housed in primary school buildings. Construction of all buildings 'pucca' type having kitchen, store room, toilet facility and electricity supply.

There should be adequate supply of supplementary nutrition in every AWC, growth charts should be present in every AWC for each eligible beneficiaries and it should be regularly maintained by AWWs. All the components of preschool education and medical kit should be present in AWCs. Referral slips should be present and AWW should know their uses.

All the essential registers should be made and updated time to time by AWWs. Every AWC must have all the type of weighing machines in working condition. Prioritizing the work responsibilities of Anganwadi workers should be considered keeping in view the educational status, time availability, honorarium paid and records to be maintained. All the AWWs should get training on regular basis on new initiatives by government. They must spend minimum of 4 hours at AWCs and visit 2-3 houses every day. Meetings and 'Village Health and Nutrition' day should be organized on monthly basis. All AWWs must carry out village survey biannually. Their work should regularly be monitored by 'Mukhya Sewikas' and Child Development Project Officer (CDPO).

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