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A STUDY ON FUNCTIONING OF THE NUTRITIONAL SERVICES IN ANGANWADIS FOR 0 – 3 YEARS CHILDREN UNDER ICDS PROGRAMME IN DELHI FROM PROVIDER'S PERSPECTIVE.

Community Medicine

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ABSTRACT

INTRODUCTION: Pregnant and lactating women and children under three years have high nutritional requirements due to rapid growth both physical and mental/cognitive, of the developing foetus/neonate/infant/young child. Providing a safe and hygienic environment, Anganwadi worker training, workload, status and remuneration, inadequacy and uneven distribution of staff and low prioritization of monitoring and evaluation activities are the factors which are responsible for quality of ICDS services.

OBJECTIVES: To study availability and functional adequacy of infrastructure for providing nutritional services in anganwadi of urban area

METHDOLOGY: The study was conducted at Mehrauli and Hastsal Project of Delhi. The study population includes Anganwadi supervisor and Anganwadi worker of all the Anganwadis in the study areas. It was a cross sectional and descriptive type of study. Variables of study was manpower available at AWC and Infrastructure at AWC were assessed by the researcher visiting each anganwadi centre and observation of AWC/questions from Anganwadi staff. Data was collected by observational checklist and interview schedule.

RESULTS: All AWC of both project areas have been operational since five to more than 20 years. While all AWC had provision of safe drinking water, toilet facility was available in only 31.58% of AWC. Out of 57 AWCs covered in this study 21AWC from Mehrauli have functional Dial Salter balance with place to hang it. Training regarding handling of children with handicap/disability and child nutrition in both areas was given to some AWW. Anganwadi Supervisor in Hastsal reported that a panel of AWW was on ad hoc basis and 2 AWW were posted in new ICDS project from the month of data collection however in Mehrauli there was no list of on panel AWW. Mother held 'Mother and Child Protection card' was not present in any AWC. Anganwadi Supervisors' were able to plot the weight correctly. All 51 AWW were able to identify correctly Weight within normal, moderately undernourished and severely undernourished range as per WHO norms. Visit of supervisors were to disseminate regular instructions and MPR and provide supportive supervision/guidance if required by AWWs.

CONCLUSION AND RECOMMENDATION: Infrastructure norms for AWC especially for space for multiple activity room and storage space may need to be different for rural and urban. Coordination between the AWW and the health staff for convergence of needed health and nutrition services including referral should be enhanced for improving health and nutritional status of the children.

KEYWORDS

ICDS, Provider's Perspective, AWW

INTRODUCTION

Pregnant and lactating women and children under three years have high nutritional requirements due to rapid growth both physical and mental/cognitive, of the developing foetus/neonate/infant/young child. Adverse nutrition-infection interaction results in a vicious cycle with serious consequences to the life of the infant/young child. Realising the need for a programme to promote adequate nutritional status and prevent under-nutrition especially in the vulnerable groups like pregnant and lactating women and pre-school children the Government of India started the Integrated Child Development Services (ICDS) as a Project in 1975 focussing on "Nutrition, Assisting Health Services. Pre-school Education".

Even after three decades of implementation of nutritional services under the ICDS programme poor nutritional status of children in India is seen. The ICDS programme faces substantial operational challenges such as:

Achieving ICDS universalization with quality:

Variations in age, gender, socio-economic status has hampered in achieving universality with quality. Responding to Public Interest petitions, the Supreme Court intervened by issuing various orders from time to time [1]. On 28.11.01, the Supreme Court directed the government to ensure that every settlement has a functional anganwadi centre (AWC), and that ICDS is extended to all children under 6, all pregnant and lactating women and all adolescent girls. The order further extended to specify that Below Poverty Line (BPL) is no longer a criterion under ICDS to be an eligible beneficiary.

Providing a safe and hygienic environment for ICDS service delivery

Location of anganwadi centres: Various evaluation studies indicate that the services under ICDS Scheme have delivered better quality results in those AWCs, which are located in their own premises. Most AWCs in urban areas are located in rented buildings, especially community buildings moreover budgetary allocation to rent is low with the consequence that AWCs are frequently found in small or unclean locations which thwarts their purposive function.

Construction of anganwadi centres: An improvement was found in building structure of Anganwadi Centres over the past 14 years. It was found that the percentage of AWCs housed in *kutcha* structure (38.7%) in 1992 has gone down in 2006 (19.9%). On the other hand, in 1992 only 43 per cent AWCs were found to be housed in *pucca* structure whereas in 2006, this percentage has gone up to 75 per cent. This progressive trend would have been because of provision of constructing *pucca* building of AWCs under World Bank and *Jawahar Rojgar Yojana/Nehru Rojgar Yojana* [2,3,4]. But space was found to be a problem in most of the Anganwadi Centres in urban areas. Adequate outdoor and indoor space and separate space for storage was available in only 44, 36 and 39 per cent Anganwadi Centres respectively. This situation was found to be little better in rural and tribal areas.

Toilet & Drinking water: While around 41 per cent of Anganwadis had toilet facilities, 17 per cent of these facilities were not found to be in good condition and 59 per cent AWCs were even deprived of this amenity [2]. The majority of AWCs obtain their drinking water from a tap or hand pump, but the water source varies substantially across state and rural-urban-tribal location. 27% AWCs do not have drinking water facility [4].

Anganwadi worker training, workload, status and remuneration:

Undoubtedly, the skills of the AWW and her capacity to mobilize the community to support ICDS and recruit all children stand central to

quality service delivery and ICDS effectiveness. Too often, though, performance is constrained by poor quality of training and the pressure of a large and diverse workload. AWWs can spend up to 40% of their time on supplementary nutrition-related activities and a further 39% on preschool education [4], which does not leave much time for other important ICDS activities such as growth-promotion, health and nutrition education, home visits, referral services and meeting with the community. In addition, AWWs must maintain different types of records, teach and assist in other government programmes for women and children. Low regard for important work and frequent lags in payment of honoraria contribute to dissatisfaction and lack of motivation [5,6].

Inadequacy and uneven distribution of staff

While a general shortage of staff was noticed across the projects the uneven distribution of the staff had probably made things worse. This clearly led to poor functioning of the programme as often the workload of the concerned staff becomes so heavy that she cannot effectively deliver services in spite of her best efforts [7].

Low prioritization of monitoring and evaluation activities

Given the size of the ICDS programme, monitoring and evaluation is a daunting task. The complexity, reliance on manual entries and compilations, delays and bottlenecks in the replenishment of supplies etc. has resulted in an inadequate monitoring – in the sense that information is regularly collected on inputs and outputs but the system is not oriented towards using that information to make an informed action, i.e. it is not used to improve service delivery, beneficiary recruitment or, eventually, modify programme design. A relatively small number of qualified people assigned to the monitoring and evaluation activities at almost all levels of programme implementation has further contributed in widening the gaps. Central information system for processing so much data is held back by insufficient utilization of computer networks. Software programmes are seldom used to analyse the data collected at the state and central level, except in some of the states covered under World Bank ICDS Projects.

In view of few studies addressing these issues this study will try to find out; providers' perspective on the issues of functional adequacy of infrastructure, skills for using available equipments for accurate weight and growth monitoring, efforts for universal coverage, supportive supervision available to the Anganwadi worker (AWW).

OBJECTIVES

1. To study availability and functional adequacy of infrastructure for providing the nutritional services in anganwadi of urban area.
2. To assess type of nutritional services provided and the extent of their utilization.

METHDOLOGY

The study was conducted at Mehrauli Project of South District and Hastsal Project of West District. In South District CDPO of Mehrauli Project granted permission for 12 centres of Neb Sarai, 8 centres of Lado Sarai and 10 centres of Andheriya Mod. In West District CDPO of Hastsal Project granted permission for areas 10 centres of Shiv Vihar and 17 centres of Vikas Nagar. All anganwadi centres present in the areas where permission was granted were covered in the present study. The study population includes Anganwadi supervisor and Anganwadi worker of all the anganwadies in the study areas. It was a cross sectional and descriptive type of study.

Background variables, manpower available at AWC and Infrastructure at AWC were assessed by the researcher visiting each anganwadi centre and observation of AWC/questions from Anganwadi staff. In case there was no AWW at the AWC the supervisor was contacted and details were collected from AWW of another AWC, as detailed by the supervisor. Information on type of building, indoor and outdoor space available and source of drinking water; availability and functional status of toilet, light, fan and furniture (table and chair/stool) were obtained by observation; In case of weighing machine the number of weighing machines, type, make, sensitivity minimum and maximum weight the balance can weigh and functional status of each weighing scale were assessed by direct observation. In case the Weighing scale was of Dial Salter which needs to be hung from a height the way the scale was hung whether it was stable etc were assessed.

For assessing skills of AWW for weighing and growth monitoring each anganwadi worker was observed while weighing the children under 3 where ever weighing scale was available. Variables taken were experience and training, knowledge of AWW about weighting child, knowledge of AWW about assessing accuracy of weighing balance, knowledge of AWW about assessing sensitivity of the weighing balance, knowledge of interpretation of growth chart, knowledge about IYCF, perceptions of the AWW on problems faced in performing duty, remedial measures taken and supportive supervision available for problem faced.

For assessing skills of anganwadi supervisor variables taken were experience and training, knowledge about weighing child, knowledge about accuracy of weighing balance, knowledge about sensitivity of the weighing balance, knowledge and interpretation of growth chart, knowledge about IYCF, Perceptions about Supportive supervision being provided for problems faced by AWW.

Data was collected by observational checklist and interview schedule. In this study two supervisors (two), fifty-seven anganwadi centers and fifty-seven anganwadi workers were covered. Data collection was done in duration of two months, April – May 2011. Data was analyzed by using Statistical Package for the Social Sciences 19 (SPSS 19) and Microsoft Office Excel 2010 and 97-2003 for windows software as follows: Descriptive statistics and Test of significance

RESULTS

This study was conducted in Delhi, in the anganwadi centres of Neb Sarai (12), Lado Sarai (8), and Andheriya Mod (10) (Mehrauli Project, South District) and Shiv Vihar (10) and Vikas Nagar (17) (Hastsal Project, West District) were covered.

Infrastructure

Table 1. Infrastructure available at anganwadi centres.

	ICDS Project				Total	
	Mehrauli		Hastsal			
Number of years AWC is operational	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
up to 10 years	11	36.67	27	100.00	38	66.67
10 years one day to 20 years	11	36.67	0	0.00	11	19.30
more than 20 years	8	26.67	0	0.00	8	14.04
AWW positioned at AWC	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
AWW present at AWC	26	86.67	25	92.59	51	89.47
NO AWW, AWC looked after by AWW of other AWC	4	13.33	2	7.41	6	10.53
Ownership of AWC building	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
Rented	29	96.67	27	100.00	56	98.25
Government girls' senior sec school	1	3.33	0	0.00	1	1.75
Availability of outdoor space for children at AWC	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
Available	10	33.33	0	0.00	10	17.54
Not Available	20	66.67	27	100.00	47	82.46
Location of AWC	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
Ground floor	26	86.67	27	100.00	53	92.98
First floor	4	13.33	0	0.00	4	7.02
Source of safe drinking water in AWC	**f**	**% N = 30**	**F**	**% N = 27**	**f**	**% N = 57**
Piped water into dwelling	18	60.00	0	0.00	18	31.58
Public tap or standpipe	0	0.00	7	25.93	7	12.28
Tube well or borehole	12	40.00	20	74.07	32	56.14
Supportive Infrastructure	f	%	F	%	f	%
Light	26	87	27	100	53	92.98
Fan	26	87	27	100	53	92.98
Table	9	30	1	4	10	17.54
Chair	30	100	27	100	57	100.00
Toilet	16	53	2	7	18	31.58
***All anganwadi centres open at 0900Hrs and Close at *All anganwadi centres in pucca building.**						

Details of infrastructure available in AWC are given in **Table 1**. All AWC of Hastsal Project were operational for at least five years, whereas in Meharauli project area it ranges from five years in Andheria

Mor to more than 20 years in Neb Sarai. Six AWC (10.53%) were without AWW in place; the services for these areas were being provided by AWW of another nearby AWC in the same locality with resultant increase in area of responsibility of such AWW; this arrangement may affect coverage and quality of service rendered by them.

While all AWC had provision of safe drinking water, toilet facility was available in only 31.58% of AWC. The study conducted by **FORCE Delhi 2007**[8] where only 58% AWCs had clean drinking water. Toilet facility was available in only 18 (31.58%) of AWCs; this compares well with study by **NIPPCD 2006**[2] where of 41% of AWCs with toilet facilities, 17% of these facilities were not found to be in good condition and 59 % AWCs did not have toilet facilities In the study conducted by **FORCE Delhi 2007**[8] 57% centres had toilets facility.

Space available for AWC activities

Table 2. Area of AWC Room

	ICDS Project				Total	
	Mehrauli		Hastsal			
Size of AWC room	f	% N=30	F	% N=27	F	% N=57
5.4m*7.2m	3	10	0	0	3	5.26
5.4m*5.4m	1	3	0	0	1	1.75
5.4m*2.4m	1	3	0	0	1	1.75
3.6m*3.6m	8	27	2	7	10	17.54
3m*3m	1	3	4	15	5	8.77
2.4m*3.6m	1	3	3	11	4	7.02
2.4m*3m	0	0	13	48	13	22.81
2.4m*2.4m	13	43	5	19	18	31.58
1.2m*2.4m	1	3	0	0	1	1.75
1.2m*1.2m	1	3	0	0	1	1.75

Size of AWC room is tabulated in **Table 2**. The size varies from range 5.4m X 7.2m to as small to 1.2m X 1.2m. All AWC in the study population were situated in one room of size less than proposed area. This highlights the shortage of space for all activities of the AWC like weighing children and conducting nutrition and health education sessions or preschool education. AWC in urban areas are likely to have this constraint.

Space requirement for an anganwadi centre, as per proposed infrastructure norms for anganwadi centre by Ministry of women and child development Government of India, dated 10 March 2011, for multipurpose room (room to cater 30 children for multipurpose activities) is 7m X 7m or 8m X 6m.

Storage space

Table 3: Storage space available in the AWC

	ICDS Project				Total	
	Mehrauli		Hastsal			
Storage Space Available At AWC	F	% N = 30	F	% N = 27	f	% N = 57
no storage space available	6	20	0	0	6	10.53
One small iron almirah	1	3	0	0	1	1.75
One small iron almirah and one iron box	2	7	0	0	2	3.51
Two large iron almirah	1	3	0	0	1	1.75
One iron box	1	3	0	0	1	1.75
shelf in wall	18	60	27	100	45	78.95
shelf in wall, iron almirah, iron box	1	3	0	0	1	1.75
***All anganwadi centres open at 0900Hrs and Close at *All anganwadi centres in pucca building.**						

Storage space available in the AWC of the study is given in **Table 3**. Space requirement for storage in an anganwadi centre, as per proposed infrastructure norms for anganwadi centre by Ministry of Women and Child Development Government of India, dated 10 March 2011, is 3.05m X 1.5m. In Delhi since supplementary nutrition and THR (panjiri) is supplied by self-help groups on daily and weekly basis respectively, need for storage space at AWC is reduced. The study conducted by **NIPPCD 2006**[2] also highlights inadequacy of indoor and outdoor space, storage in 49% and 50% of AWCs respectively.

Balances

Three type of weighing balance were present in various distributions in AWC, details of their specification are given in **Table 4**.

Table 4. Type of Balance present at AWC

Type of balance	Maximum weight can be measured	Sensitivity
Pan Balance	15 Kg	50gm
Dial Salter	25Kg	100gm
Adult Dial	140Kg	500gm

The number of functional weighing balance present at AWC for weighing infants, children and adults was assessed in the study; details are given in Table5.

Table 5. Availability of Functional Weighing Balance at AWC

	ICDS Project				Total	
	Mehrauli		Hastsal			
Number Of Weight Balance At AWC	f	% N=30	f	% N=27	f	% N=57
0	9	30.00	8	29.63	17	29.82
1	21	70.00	3	11.11	24	42.11
2	0	0.00	13	48.15	13	22.81
3	0	0.00	3	11.11	3	5.26
Availability of place to hang weighing balance	**F**	**% N=30**	**f**	**% N=27**	**f**	**% N=57**
Available	30	100	0	0	30	52.63
Not available	0	0	27	100	27	47.36

UNICEF provided Dial Salter balance for weighing infants and young children, platform dial balance for weighing adults and pan balance for weighing infants were present in various combinations in different AWC. Details of distribution of three type of weighing balance were present in AWC, are given in **Table 6**. Similarly, **FORCE Delhi 2007**[8] observed 82.23 % AWWs reported scarcity of equipment like weighing machines in the study by. Whereas, **NIPPCD 2006**[2] observed weighing scales were available in 97 % Anganwadis of World Bank-assisted ICDS Projects, followed closely by NGO run projects 95.3 % and 85 % of regular ICDS projects, around 89 % of them were in working condition also. **Umesh Kapil et al 1996**[9] observed 75% per cent AWCs had Salter type weighing scales; in 9% of the AWCs, weighing scales were not in working condition and about 7% AWCs did not have any weighing scales in the study.

Table6. Distribution of Various Weighing Balance at AWC

Project	Area	Type of Balances	f	N	%
Mehrauli	Lado Sarai	Dial Salter	8	8	100
	Neb Sarai	Dial Salter	12	12	100
	Andheria Mod	Dial Salter	1	10	10
		No Balance	9		90
Hastsal	Shiv Vihar	Pan	1	10	10
		Pan + Platform Dial	7		70
		Pan + Platform Dial + Dial Salter	2		20
	Vikas Nagar	Pan	1	17	6
		Pan + Platform Dial	5		29
		Pan + Dial Salter	1		6
		Platform Dial	1		6
		Pan + Platform Dial + Dial Salter	1		6
		No Balance	8		47

Out of 57 AWCs covered in this study 21AWC from Mehrauli have functional Dial Salter balance with place to hang the balance, thus can weigh children up to 6 yrs but do not have any balance to weigh adults. None of AWC in Hastsal had place to hang weight; however, 4 AWC in Hastsal were supplied with Dial Salter balance. In Hastsal 15 AWC can weigh infants and adults as they have both Pan and platform Dial Balance, 3 AWC can weigh infants as they have only Pan Balance and 1 AWC can weigh only Adults as it has only platform Dial Balance. There were 17 AWC [Mehrauli (9), Hastsal (8)] where there was no weighing balance.

Action taken by AWW

Anganwadi supervisor was informed about non-functional status on weighing balance. Anganwadi Supervisor asked AWW to manage deficiency of weighing balance by rotation of weighing balance but AWW stated that rotation cannot be done as Dial Slater balance are bulky and difficult to transport even for short distances.

Action taken by Anganwadi Supervisor

Anganwadi Supervisor has already reported about the non-functional

weighing balance but it usually takes 4-6months to get it repaired/replaced, in the meantime AWW are asked to rotate functional weighing balance among them.

Table7. Availability of AWW and functional weighing balance at AWC.

AWW and functional weighing balance	Project					Total
	Mehrauli			Hastsal		
	Lado Sarai	Neb Sarai	Andheria Mod	Shiv Vihar	Vikas Nagar	
Total AWC	8	12	10	10	17	57
AWW available at AWC	8	11	7	8	17	51
No AWW at AWC	0	1	3	2	0	6
AWC available with functional weighing balance	8	12	1	10	9	40
No functional weighing balance at AWC	0	0	9	0	8	17
AWC with AWW and functional balance	8	11	1	8	9	37
AWW without functional balance	0	0	6	0	8	14
No AWW and No functional Balance	0	0	3	0	0	3

It is significant to note that out of 57 AWC there was no AWC where both children of 0 to 6yrs and adults can be weighed and the weight recorded in an appropriate growth chart. In Mehrauli where Dial Salter balance are present children of 0 to 6 years age group can be weighed; but in Hastsal, no AWC can weigh all children of 0 to 6 years age group due to non-availability of functional balance or place to hang the balance.

Reporting format

Records maintained at AWC were, Property register; Survey register; Attendances register; Stock; Immunization register; Referral register; Birth and Death register; Monthly progress report (MPR); Daily dairy; Medicine kit; weight book; Diet register; Daily SNP register; Visit dairy; Mahila mandal; Weight register; and Pregnant women register. There was variation in number of registers in Mehrauli and Hastsal as weight was maintained in weight book in Hastsal rather than registers as in Mehrauli. Mother and Child Protection Card were not available in any AWC.

According to WHO MGRS standards child is assessed as Above Normal (White coloured area denoting weight above +2SD); Normal (Green coloured area denoting weight between +2SD to -2SD); Moderately undernourished (Yellow coloured area denoting weight between -2SD to -3SD); Severely undernourished (Red coloured area denoting weight below -3SD).

In Hastsal weight of the child is plotted on the WHO growth monitoring booklet using WHO MGRS standards but they are reporting in IAP standards. This is done by reporting those children in the white part (Above +2SD) of the WHO growth chart as Normal (IAP), those in the green part (from +2SD to -2SD) as Grade I (IAP), those in the Yellow area (between -2SD and above -3SD) as Grade II (IAP) and those falling in the red area (below -3 SD) as Grade III (IAP). Thus, there is misinterpretation of the nutritional status based on weight-for-age of children i.e. Above Normal is reported as Normal; Normal is reported as Grade I; moderately undernourished is reported as Grade II; severely undernourished is reported as Grade III; there is no reporting of Grade IV.

Supportive supervision by Anganwadi Supervisor

Anganwadi Supervisor in Hastsal felt urgent need to change the reporting format in accordance to WHO MGRS standards-based M&CP card because AWW are plotting the weigh on WHO growth monitoring booklet using WHO MGRS standards but they are reporting in IAP standards.

Manpower

The details of AWWs and the training received by them in the 51 AWC with an AWW posted and in position in the AWC are given in **Table 8**.

In Mehrauli all AWW had received training regarding handling of children with handicap/disability and only one AWW had received training regarding child nutrition during last one year. In Hastsal area only 2 AWW had received training on child nutrition and 2 AWW had on job training for providing services at AWC 21 (84%) AWW had not received any training during last one year.

Table 8. Manpower Available At AWC

	ICDS Project				Total	
	Mehrauli		Hastsal			
AWW positioned at AWC	**F**	**% (N=30)**	**F**	**% (N=27)**	**F**	**% (N=57)**
AWW present at AWC	26	86.67	25	92.59	51	89.47
Age of AWW worker in years	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
20 to 30yrs	4	15	7	28	11	21.57
30yrs one day to 40 years	5	19	16	64	21	41.18
40 years one day to 50 years	11	42	2	8	13	25.49
50 years one day and more	6	23	0	0	6	11.76
Education qualification of AWW	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
Tenth	5	19	6	24	11	21.57
Twelfth	14	54	12	48	26	50.98
Graduate	6	23	5	20	11	21.57
Postgraduate	1	4	2	8	3	5.88
Number of years AWW completed service	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
up to 10 years	9	35	25	100	34	66.67
10 – 20	9	35	0	0	9	17.65
more than 20 years	8	31	0	0	8	15.69
AWW belongs to same area	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
Yes	20	77	6	24	26	50.98
No	6	33	19	76	25	49.02
Distance of AW worker from AWC	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
Less than 3 Km	16	62	10	40	26	50.98
3 to 5 Km	7	27	14	56	21	41.18
6 to 8 Km	1	4	1	4	2	3.92
Type of training course attended in last one year	**F**	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
Handicap child	26	100	0	0	26	50.98
Child nutrition	1	4	2	8	3	5.88
No Training during last one year	0	0	21	84	21	41.18
Job Training	0	0	2	8	2	3.92
*** AWC where AWW were not present are not taken in calculation for N**						

Supportive supervision by Anganwadi Supervisor

Anganwadi Supervisor of Mehrauli reported that there was no list of on panel AWW thus there were 4 AWC without AWW. Whereas as in Hastsal one on panel AWW was on ad hoc basis and 2 AWW were posted in new ICDS project from the month of data collection thus process has been initiated to fill vacant position of AWW.

Table 9. AWW Skills of weighing child correctly

	ICDS Project				Total	
	Mehrauli		Hastsal			
AWW hang the weighing scale correctly and securely at eye level	**F**	**% N = 26**	**f**	**% N = 25**	**f**	**% N = 51**
Yes, As observed	20	77	0	0	20	39.22
No weighing scale available, But answered correctly when asked	6	23	21	84	27	52.94
No place to hang Salter balance, But answered correctly when asked	0	0	4	16	4	7.84
AWW read weight reading at eye level for hanging balance and vertical for adult dial balance	**F**	**% N = 26**	**f**	**% N = 25**	**f**	**% N = 51**

Yes, As observed	20	77	17	68	37	72.55
No weighing scale available, But answered correctly when asked	6	23	8	32	14	27.45
AWW check for and correct zero error	**F**	**% N = 26**	**f**	**% N = 25**	**f**	**% N = 51**
Yes, As observed	20	77	17	68	37	72.55
No weighing scale available, But answered correctly when asked	6	23	8	32	14	27.45
AWW take the reading from one foot away	**F**	**% N = 26**	**f**	**% N = 25**	**f**	**% N = 51**
Yes, As observed	20	77	17	68	37	72.55
No weighing scale available, But answered correctly when asked	6	23	8	32	14	27.45
AWW take reading up to smallest fraction possible	**F**	**% N = 26**	**f**	**% N = 25**	**f**	**% N = 51**
Yes, As observed	20	77	17	68	37	72.55
No weighing scale available, But answered correctly when asked	6	23	8	32	14	27.45
*** No AWW take average of minimum of two weight reading. * No AWW had knowledge about how to check accuracy of the weighing balance. * No AWW had knowledge about how to check sensitivity of the weighing balance.**						

Details of skills for weighing correctly are given in **Table 9**. Out of all 51 AWW, observations for Dial Salter weighing balance was carried out in 20 AWW as hanging balance and place for hanging was available whereas knowledge was assessed in rest 31 AWW. For all the following steps in weighing the child 37 AWW with functional balance (any type) were observed and rest 14 AWW were assessed for the knowledge as there was no weighing balance. All AWW were aware of securely hanging weighing scale correctly and at eye level, taking the reading of the weight at eye level or looking at the reading from directly above without any inclination or angulations, checking and correcting zero error and taking weight up to smallest fraction. But, no AWW was either aware of or practicing taking final reading as average of two readings; checking sensitivity of weighing balance and checking accuracy at regular and frequent intervals.

In contrast **Umesh Kapil et al 1996**[9] observed that almost 90% of the AWWs were not aware of the correct sequence of steps required for conducting growth monitoring and nearly 75% of AWWs were not able to use the Salter weighing scales correctly. **K. Indira Bai et al 1989**[10] in their study observed that only 69%AWWs bring the pointer to zero and 54% adjust for zero error before weighing a child**.**

Supportive supervision by Anganwadi Supervisor

Both Anganwadi Supervisors were aware of securely hanging weighing scale correctly and at eye level, taking the reading of the weight at eye level or looking at the reading from directly above without any inclination or angulations, checking and correcting zero error and taking weight up to smallest fraction and checking accuracy at regular and frequent intervals. They used to advice the AWWs on the need for checking accuracy of the balance using an ISI standard weights/PDS ration shop ISI std weight.

But, no Anganwadi Supervisors was aware of taking final reading as average of two readings; checking sensitivity of weighing balance using an ISI standard weights/PDS ration shop ISI std of 100gm and checking for increase in weight at regular and frequent intervals. Thus, Anganwadi Supervisor were able to provide supportive supervision to AWW for weighing the child for growth monitoring but not for checking sensitivity or taking final reading as average of two reading.

Skills of plotting and interpretation of the growth chart

Table 10. AWW skills of plotting weight of the child in growth charts and growth monitoring

	ICDS Project				Total	
	Mehrauli		Hastsal			
AWW Plot weight against Child Age In Growth Card correctly	**f**	**% N=26**	**F**	**% N=25**	**F**	**% N=51**
Yes, As observed	0	0.00	17	68.00	17	33.33
No growth chart available but able to mark on graphs provided by us.	20	76.92	0	0.00	20	39.22
No weighing scale present, but answered correctly and able to mark on graphs provided by us.	6	23.08	8	32.00	14	27.45
AWW Plot Weight Against Child Age In Growth Card Immediately	**f**	**% N=26**	**F**	**% N=25**	**F**	**% N=51**
No growth chart/booklet available record maintained in registers	20	76.92	0	0.00	20	39.22
Yes, done on growth monitoring booklet available	0	0.00	12	48.00	12	23.53
Not done on growth monitoring booklet available	0	0.00	5	20.00	5	9.80
No balance, weight not done regularly	6	23.08	8	32.00	14	27.45
*** Mother and Child Protection card was not available in any AWC.**						

Details of AWW's skills for plotting and interpretation of growth card are given in **Table 10**. Mother held 'Mother and Child Protection card' was not present in any AWC. In Mehrauli record is maintained in the self-maintained registers according to IAP standards. For testing the knowledge AWW were asked to plot weight of the child on the growth charts in the M & C P Card provided by us, (see observational checklist). All 26 AWW of Mehrauli were able to plot the weight correctly but, only 20 AWW were maintaining the record in register and maintaining the record, rest 6 AWW do not have weighing machine thus not maintaining the record regularly. In Hastsal weight of the child is recorded in growth monitoring booklets based on WHO MGRS standards. The way the AWW plotted the weight in the growth monitoring booklets available and being currently used in the AWC was observed. All 25 AWW of Hastsal were able to plot the weight of the child correctly but only 12 AWW were maintaining the record regularly in the growth monitoring booklet, out of rest 13 AWCs 5 AWW were irregularly maintaining the growth monitoring booklet even with functional balance and 8 AWW do not have functional weighing machine.

Supportive supervision by Anganwadi Supervisor

Anganwadi Supervisors' were able to plot the weight correctly. Thus, Anganwadi Supervisor was able to provide supportive supervision to AWW for plotting the weight correctly whenever necessary.

Interpretation of growth patterns of weight of children

Table 11. AWW skills of interpretation of the growth card and advising the mother of the child for corrective actions and IYCFP

	ICDS Project				Total	
	Mehrauli		Hastsal			
	f	**% (N=26)**	**f**	**% (N=25)**	**F**	**% (N=51)**
Weight in above normal range	13	50	0	0	13	25.49
Weight in Normal Range	26	100	25	100	51	100.00
Weight in Moderately Undernourished	26	100	25	100	51	100.00
Weight in Severely Undernourished	26	100	25	100	51	100.00
Trajectory normal range	26	100	1	4	27	52.94
Trajectory moderately undernourished	13	50	0	0	13	25.49
Trajectory severely undernourished	13	50	0	0	13	25.49
Growth flattening	26	100	25	100	51	100.00
AWW referred beneficiaries to health centre for severe malnutrition and disease	**f**	**% (N=26)**	**f**	**% (N=26)**	**F**	**% (N=26)**
Yes, refers to local dispensary.	19	73.08	8	32.00	27	52.94
No feedback of referrals as local dispensary don't honour referrals	7	26.92	17	68.00	24	47.06

To assess AWW skills of interpretation of growth patterns of weight for age, pre marked weight for age growth patterns in the growth chart in the Mother and Child Protection Card were used. All 51 AWW were able to identify correctly Weight within normal, moderately undernourished and severely undernourished range as per WHO

norms. Trajectory within normal range and growth flattening was identified by all AWW. Though there was no prior training of AWW regarding Mother and Child Protection Card, 13 AWWs from Mehrauli were able to identify correctly weight in above normal range and maintaining trajectory while located within moderately undernourished or within severely undernourished zone as being normal for that individual child. **Umesh Kapil et al 1996**[9] observed that 54.2% of the workers did not know about the type of intervention measures to be taken on findings of growth monitoring.

Adarsh Sharma et al 1992[11] observed that about 36.3% AWWs were not able to monitor the growth of children and the reasons were non availability of growth charts, lack of skills in filling up growth charts, and weighing scales not being in working condition.

Supportive supervision by Anganwadi Supervisor

Both the Anganwadi Supervisor were neither aware of WHO MGRS standards nor they were trained to interpret the M&CP card, urgent need of training to interpret WHO MGRS standards was felt by the AW supervisor of Hastsal. Thus, Anganwadi Supervisors' were not able to provide supportive supervision to AWW for interpretation of M&CP card based on WHO MGRS standards.

Referral of severely under-nourished children and linkage with health services

Severely malnourished child was referred to local dispensary by 19 AWW of Mehrauli (all from Lado Sarai and Neb Sarai) and 8 AWW of Hastsal; 7 AWW of Mehrauli (all from Andheria mod) and 17 AWW of Hastsal do not refer as they felt referrals are not honoured, however they advised the parents/care givers to get a medical opinion for their children.

Reported coverage of services by the AWCs

Denominator for providing service is calculated based on the survey done by AWW in her area of responsibility. There is no provision of assessing coverage against expected number of children in the 0-6 year age group based on CBR for the district. Hence, though the services are available universally but it is been rendered only to those children who are registered in AWC, children left unaddressed may include those who need the anganwadi services the most.

Supportive supervision by Anganwadi Supervisor

Anganwadi Supervisor were not aware of importance of assessing coverage against expected number of children in the 0-6 year age group based on CBR for the district hence cannot provide supportive supervision to AWW for assessing coverage against expected number of children in the 0-6 year age group based on CBR for the district.

For assessing frequency of weighing the children 0 to 3 years, all AWC were taken, including those where there was no AWW. Out of all 57 AWC weighing of the children registered in their AWC was done regularly each month at 34 AWC (20 AWC from Mehrauli and 14 AWC from Hastsal). If only those AWCs are considered where there are AWWs and functional weighing balance i.e. 37 AWC weighing of the children registered in their AWC was done regularly each month at 91.89% of AWC.

Supplementary Nutrition and Take-Home rations supplied

Table 12. Menu schedule, frequency, quantity and source of supplementary nutrition and Take-Home Rations provided at AWC in Delhi.

Day	Type of cooked food	Quantity in gms	Cooked Snack	Quantity in gms
Mon	Sweet Pudding of coarse flour *(Halwa)*	200	Yellow Peas boiled*(Matar)*	50
Tue	Namkeen Dalia	270	Black Gram boiled *(Channe)*	50
Wed	Vegetable Kichiri	270	Yellow Peas boiled *(Matar)*	50
Thr	Vegetable Pullao	270	Lobiya boiled	50
Fri	Sweet Dalia	270	Yellow Peas boiled *(Matar)*	50
Sat	Vegetable Kichiri	270	Black Gram boiled *(Channe)*	50
*** Panjiri as THR 840 gms per child per week for age of 7 months to 12 months.**				
*** Panjiri as THR 840 gms per child per 2 weeks for age of 1 yr to 3 yrs.**				
*** Source of THR for 7 mths to 12 mths is packed panjiri supplied on weekly bases to AWC.**				
*** Source of cooked food and snack for 1 year to 6 years is common kitchen for project in each area run by NGO.**				
***Site for beneficiaries to consume food is within AWC for 3 years to 6 years and less than 3 years take cooked food and snack to home**				
***Menu schedule present and followed in AWC**				

Details of Menu schedule, frequency, quantity and source of supplementary nutrition and Take-Home Rations provided at AWC in Delhi are given in T**able 12.** In study by **NIPPCD 2006**[2] Ready to Eat (RTE) food was provided in all types of projects, maximum being in Anganwadis of urban projects (45.8%), followed by rural (33.6%) and tribal (23.5%) projects. Some Anganwadis (18.0%) were providing both cooked and RTE. **Adarsh Sharma et al 1992**[11] observed that about 38% urban, 29% rural and 19% tribal AWWs mentioned that the food items served as supplementary nutrition in Anganwadis were not acceptable to the community. The food was difficult to digest, caused diarrhoea, was not tasty, and sometimes not fit for consumption. In study by **FORCE Delhi 2007**[8] in 26 per cent centres AWWs complained about irregular food supply.

As per the affidavit submitted to Honourable Supreme court on behalf of Ministry of Women and Child Development, Government of India it was stated that the children especially those in the age group of 6 months to 24 months children are not required to come to the Anganwadi Centre every day. Instead, 'Take Home Ration' has to be provided to this category of beneficiaries. But, the State Governments/Union Territories have the flexibility to select the type of food to be given to the beneficiary as part of the supplementary nutrition depending upon local availability, type of beneficiary, location of the project, administrative feasibility etc.

Supportive supervision and visit of senior staff

Table 13. Frequency of Visit of Senior Staff.

	ICDS Project				Total	
	Mehrauli		Hastsal			
Frequency of visit of health staff to AWC	**F**	**% N=30**	**f**	**% N=27**	**F**	**% N=57**
For Immunization in group of two or three AWC average once in two months	8	30.77	17	68	25	49.02
Any case is taken to local dispensary as it is situated centrally in area	12	46.15	0	0	12	23.53
No visit to AWC, immunization done at Dispensary and referrals are not honoured	0	0.00	10	40	10	19.61
No Visit of Health staff in AWC and no coordination and referrals are not honoured	10	38.46	0	0	10	19.61
*** Frequency of visit of CDPO to AWC once per month * Frequency of visit of Anganwadi Supervisor to AWC 4 to 5 times per month**						

Visit of supervisor were to disseminate regular instructions and MPR and provide supportive supervision/guidance if required by AWWs.

CONCLUSION AND RECOMMENDATION

AWC should be assessed for ability to provide growth monitoring including all its components - functional weighing balance with at least sensitivity of 100gms to weigh all children; AWW skilled in weighing the children, plotting the weight in individual child based mother held M&CP cards, interpreting M&CP card correctly, advising the mother for corrective actions according to nutritional status of child and reporting format based on WHO 2006 MGR standards to report the nutritional status of children.

Anganwadi supervisors should optimally utilise available enabling provisions for ad hoc appointment of AWW, repair of equipment, or shortage of balances in a project for eg. by rotation of balance within a project if required. It is essential that the list/panel of AWWs be kept updated regularly in every project.

Measures to fulfil deficiency of weighing balance and reduce four to six months' time usually taken to replace or repair balance may need to be put in place. A single electronic balance with 100 gm sensitivity could be used instead of multiple balances for weighing different age groups. Provision of petty cash for anganwadi centre can be used for minor repairs as well as procurement of the battery used for the electronic balance.

Skills and knowledge upgradation training of AWWs should continue with focus on areas where skills are deficient. Untrained supervisors need to undergo training for growth monitoring (with focus on all aspects as mentioned earlier) on priority. Monthly Progress Report Formats need to be according to WHO 2006 MGRS standards so that correct assessment of the under nutritional status of the children can be done.

Inclusion of a column giving expected number of under 6 age children (calculated from CBR for the district) in the MPR would help in assessing the performance for growth monitoring and supplementary nutrition as a measure of universal access as per Supreme Courts directive.

Infrastructure norms for AWC especially for space for multiple activity room and storage space may need to be different for rural and urban especially large metros given the constraints of available space in such cities. There is need to explore possibility of providing dry grains through PDS for those 6-36 months aged children who need SNP accompanied with regular growth monitoring of child to ensure improvement in nutritional status of the child. AWW should provide advice and counselling to mothers for practicing components of infant and young child feeding practices and for appropriate health care; this can be done during Nutrition and Health Education session (NHEs) in urban areas and Village Health and Nutrition Day in rural areas.

Coordination between the AWW and the health staff for convergence of needed health and nutrition services including referral should be enhanced for improving health and nutritional status of the children.

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