Research Article

Infrastructure and performance evaluation of Integrated Child Development Service Scheme in selected areas of Mysore, Karnataka, India

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ABSTRACT

Background: Integrated child development scheme is a flagship program in the field of nutritional services in India. Even after decades of its launch, there are some lacunae in infrastructure, manpower, work hours, facility provision for the children. In spite of continuous innovations and changes under nutrition and growth retardation is still a problem. The objectives of the studies were to assess the infrastructure and facilities at the Anganwadi (AW) centres in the field practice area of a private Medical College in Mysore and to assess the growth pattern of the children in these Anganwadis.

Methods: All the Anganwadis in the villages under two rural field practice areas of a medical college were surveyed using a pre-tested questionnaire. Details regarding the infrastructure, materials available and work details were collected by visiting the Anganwadi and interviewing the Anganwadi worker (AWW). Anthropometric measurements of the children were recorded.

Results: In two primary health centres (PHC) and one urban health centre (UHC), 43 Anganwadi centres were surveyed, covering 585 children. Separate kitchen and toilet was present in 88.4 and 90.7% of AW respectively. In 22 (51%) centres children were sitting on the floor. All centers had helpers but one centre was not appointed with AWW. Mean years of experience was 18.9 ± 6.7 . There were 270 boys (46.2%) and 315 girls from two to six years of age. Mid upper arm circumference was less than 13.5cm in 63 (10.8%) children.

Conclusions: Most of the Anganwadis were given the basic facilities and functioning optimally. Still there are some shortcomings in infrastructure and physical growth of the children.

Keywords: Anganwadi, Infrastructure, Physical growth

INTRODUCTION

To improve the health status of the mother and children and fulfill its commitment towards national policy for children, Government of India launched integrated child development services (ICDS) scheme in 33 blocks of the country on 2nd October of 1975. Later it was expanded nationwide with the objectives to cater to the needs of susceptible population group of children and women. It

emphasizes on improving nutritional status, health status and psychosocial development of the preschool children along with taking care of adolescent girls, pregnant and lactating women.¹

The outlets of this ambitious and large program are situated for every 1000 population (one per village/settlement if the population is less) and are known as 'Anganwadi' (AW). Empowered with one anganwadi

worker (AWW), studied above highschool level and a helper it functions from 9 to 4 pm. Nonformal school education, immunization, growth monitoring using Growth charts, periodic health checkups are conducted along with providing nutritional supplementation. 11th five year plan recommends to provide 500Kcal/day/child and 10gm protein/day/child with provision of extra calories and proteins for malnourished children. It also provides Pregnant mothers with 600 kcal and 20 gm of proteins per day. AWWs strive to identify malnutrition of children at the earliest and prevent severe undernutrition.¹

They also work for intersectoral coordination for nutritional action to improve overall health status of the community. To avoid the monotony of taste menu is frequently changed and to catch up with the changing educational system theme based teaching has been introduced. Despite all these efforts by the government, recent trend is discouraging in the rural as well as urban areas. Many parents are preferring play homes and montessorios with hefty fees over proven establishments of anganwadis.²

It would be wrong if we assume that everything is fine with ICDS. Lack of satisfaction about the honorarium provided to AWW, excessive record maintenance by AWW, irregular logistic supply, lack of own building or good quality building, lack of support from the community members have been reported in many places.^{2,3} All the national programs make use of AWW at the village level which leaves her overburdened and with less time for attention towards the children.

All the AWWs are not run in pucca buildings. Availability of sanitary latrine ranges from 3 to 50% in different parts of the country.^{4,5} Many are not supplied regularly with iron and folic acid (IFA) tablets. Piped drinking water supply, electricity was sparsely available and provision of water filters is a luxury. Though mattress is supplied to anganwadis because of irregular supplies children have to sit on the floor in many places.⁵

With all these limitations AWWs have survived the test of time for three decades and served the maternal and child health area of our country. But in the changing scenario of preschool education, AWWs are struggling to cope up with the private sector which is evident with decreasing enrolment in AWWs. Present study has been carried out for situational analysis of the facilities and functioning of AWWs and to assess nutritional status of the children enrolled in them, infield practice areas of a private Medical College in Mysore.

METHODS

A cross sectional community based facility evaluation study has been carried out in two rural PHC areas covering 27000 and 13000 population and one urban health centre (UHC) area in Mysore city covering 9000 population between June 2014 to January 2015.

Study population

AWWs coming under these PHC (37) and UHC (6) areas and children enrolled in them were included in the study.

Structured pretested questionnaire was used to collect information related to the infrastructure, availability of facilities, enrolment of children, utilization of ICDS services and growth parameters of the children.

Data collection

House surgeons posted in Department of Community Medicine were trained on collecting the information using proforma. Class room session was held for discussing the components of questionnaire. They were given hands on training for assessment of registers and growth of the children. Filled questionnaires were cross checked for completeness by post graduate student and entered into excel sheet.

Mid upper arm circumference of children (MUAC) was measured using routine measuring tape on the nondominant arm of the child while it was seated on a chair with arm hanging by the side of the body with forearm resting on its thigh in semipronated position. Weight was measured in minimum clothing using the Salters baby weighing machine provided with the AWWs. Height was measured against a wall marking of length in centimetres with heel, buttocks, shoulders and occiput touching the wall.

Data analysis

Data entered in excel sheet was analysed using trial version of SPSS software. Availability of infrastructure and other facility was described using percentages. Growth of the children was assessed using mean and standard deviation.

Ethical issues

No interventions were done in the present study. Institutional ethical committee clearance was taken before starting the study. Informed written consent was taken from the anganwadi workers before collecting the information.

RESULTS

From two rural PHC areas 37 and from UHC six AWW centres were involved in the study. Total of 585 children were surveyed from these centres. 42 centres had AWW employed while one was run by in charge AWW. All centres had a helper (female assistant for AWW who does cooking, cleaning and mobilizing the children) employed.

As seen in Table 1, 19 (44%) of the AWW centres were functioning in single room buildings. Five of these

centres were run in rented buildings. 38 (88%) centres had the provision of separate kitchen while in the remaining cooking was carried out in one corner of the room. LPG was provided for 41 AWs while two used kerosene. In centres with more than one room extra rooms were used for storing raw food items and registers and other logistics.

Nearby bore well was the source of water for 38 (88%) AWs and water was fetched by the helpers. Either filtration or boiling was practiced for purifying the water in 41 (95%) AWs.

Table 1: Availability of infrastructure and other facilities at AWs in the study area.

Facility	Number	Frequency
Number of rooms		
One	19	44.2
Two	18	41.9
Three	6	14.0
Separate toilet		
Present	39	90.7
Absent	4	9.3
Seating facility		
Stool	2	4.6
Carpet	12	27.9
Floor	22	51.2
Chair	7	16.3
Separate kitchen		
Present	38	88.4
Absent	5	11.6
Source of drinking water		
Bore well	37	86.0
Tap water	5	11.6
River	1	2.3
Purification of water		
Filter	35	81.4
Boiling	6	14.0
None	2	4.7
Fuel used for cooking		
Liquid petroleum gas	41	95.3
Kerosene	2	4.7
Playing toys		
Present	28	65.1
Absent	15	34.9

In half of the AWs children were made to sit on the floor while remaining was donated with carpet or chairs. Separate toilet was constructed in 39 (91%) AWs. It was a common toilet for both boys and girls everywhere. Teaching charts for theme based learning were present in all the centres either as hanging charts or painted on the wall. 28 (65%) centres had playing toys for the children.

In Table 2, two thirds (67%) of the AWs were covering a population of 500 to 1000. Most of the AWW (86%)

were experienced more than 10 years. Half of the AWs (50%) had enrolled 30 to 75 children as their beneficiaries. Most of the centres (95%) had updated growth charts of the children enrolled in their centre for last three months. Under nutrition according to MUAC measurement was noticed in 63 (11%) children. All the children in the area were adequately immunized for their age. Registers, supplementary nutrition and weighing scale were present in all the AWs.

Table 2: Distribution of beneficiaries and performance indicators of AWs in the study area.

Variable	Frequency	Percentage
Population covered by the study Anganwadis		
<500	6	14
501-750	15	34.9
751-1000	14	32.6
>1000	8	18.6
Experience of AWW in years(N=42)		
<5	4	9.3
6 TO 10	2	4.7
11 TO 20	14	32.6
>20	22	53.5
Number of children enrolled in Anganwadi		
<30	14	32.6
31-50	9	20.9
51-75	13	30.2
>75	7	16.3
Growth charts updates for last 3 months		
Complete	41	95.3
Incomplete	2	4.7
Mid upper arm circumference of children		
Normal	522	89.2
Mild/moderate under nutrition	41	7.0
Severe under nutrition	22	3.8

Service utilization rate was 100% in 88% AWs for children between three to six years and it was 90% for children below three years. Out of 303 pregnant women in the areas covered by the study AWs, 17 (5.6%) were anemic.

Totally 233 village health sanitation and nutrition days (VHSND) were observed during previous six months by the study AWs. With a median of one per month (range zero to 12). 21, six children had suffered from acute respiratory tract infections, diarrhoeal diseases respectively during one month prior to the survey date. 76.7% and 11.6% of the AWW were out of AW on an official work for six days and 4 to 5 days respectively. Attending meetings was the main reason for this. Mean (standard deviation) BMI for these children was 15.02 (1.82), 14.86 (1.91), 15.78 (1.45), 13.86 (1.23) for boys and 15.07 (2.40), 14.90 (2.00), 14.36 (1.96), 13.79 (1.57) for girls for the completed age of 2,3,4,5 respectively.

DISCUSSION

Mysore is one of the districts considered to be improved based on various indicators. Literacy rate and utilization of services is quite high in the area.⁶ This area by the virtue of its high educational, political representation has enjoyed attention of government and private agencies and their services. This is represented in the form of

availability of adequate infrastructure in the field of healthcare and education. As seen in the present study all the AWs were functioning in pucca buildings with maximum in government owned buildings. Scenario is far better in the study area as only 40% and 57% of the AW buildings are owned by Government in India and Karnataka respectively.²

Table 3: Distribution of nutritional status of Anganwadi children according to their age and gender.

Completed age in years	Sex	Mid upper arm circumference			Total
		Normal	Mild/Moderate under nutrition	Severe under nutrition	
2	Boys	12	4	2	18
	Girls	17	4	4	25
3	Boys	72	10	3	85
	Girls	70	8	3	81
4	Boys	85	6	5	96
	Girls	113	3	2	118
5	Boys	66	3	0	69
	Girls	78	3	3	84
Total	Boys	235	23	10	268
	Girls	278	18	12	308

More than half of study AW centres had more than one room. Upto 90% of the AWs had separate kitchen and toilet facility which is quite higher than reported from other areas. The panchayats and civic agencies have been in good terms with the ICDS system which has helped in construction of these toilets in the area. A nationwide evaluation study of ICDS by Niti ayog in 2015 revealed that only 59% and 56.7% AWs had adequate space in India and Karnataka respectively for seating and storage.² Study from Pondicherry reported safe food storage area was observed in 63.64% urban and 36.35% rural AWCs.⁷ Though half of the AWs made children sit on the floor, the remaining had provision of carpets, chairs or stools. This is because these AWs are under the field practice area of a Medical college and medical students who visit the villages for their family health advisory survey, contribute and donate utilities at the end as a social responsibility.

Drinking water had to be fetched by the nearby bore wells and most were supplied with purifiers from the PHC funds. National level evaluation revealed similar results where 86.3% AWs had provision of safe drinking water. Assam had this facility for only 40% of its AWs.²

Registers, supplementary nutrition and weighing scale were present in all the AWs. Teaching charts were available in all the centres and most of them had toys for the children. Some of the toys were given by ICDS and some were donated by medical students or philanthropists. In some AWs creative models and toys out of waste materials were made by AWW and used.

Adequate playing material and space was observed in 36.36% urban and 18.18% rural AWCs.⁷ This is further supported by an incident in Tamilnadu where ICDS system in Krishnagiri district invited people to donate toys for the children in view of shortage of toys in its AWs.⁸

There were eight AWs which had to cover more than 1000 population. This was because in bigger villages the demarcation of coverage area of these AWs was not by population, but by area stratified according to communities to increase utilization by removing social barriers. Small villages with population less than 500 were also having AWs. Majority were covering a population between 501 to 1000.

Most of the AWWs in the present study were working for more than 10 years. Though there was dissatisfaction regarding the honorarium paid to them earlier, due to recent pay hike they got many continue to work with the job. Many AWWs opined that working with children gives them satisfaction. They were also concerned with the decreasing number of children attending the AWs despite their repeated efforts. The trend of Montessorries, craze of English medium schools was catching villagers big time. This is supported by the study finding of 12% of children from the coverage population not attending the AWs. One-third and half of the registered children were attending respective urban and rural AWCs.⁷

Performance indicators of AWs was assuring as maintenance of registers growth chart updating enrolment

of children, pregnant women, adolescent girls, organizing of VHSNDs were all adequate with low percentage (5.6%) of anemic women in the area. Only 45.46% rural AWCs were maintaining growth charts regularly.⁷ All the children in the anganwadis were immunized completely for their age. This is better as compared to northern India statistics as reported from Jaipur, which had only 65% of 12-24 months children completely immunized.⁹

Areas of concern were,

- a. 10.8% children suffering from under nutrition and 4% being severely undernourished. Under nutrition based on MUAC was noticed in 9.7% of the boys and 6.4% girls. The proportion of these children went on decreasing with the increasing age, suggesting probably improved nutritional status over the years during their association with the AWCs. National evaluation in 2014 revealed that 17% and 4.2% were suffering from mild/moderate under nutrition and severe under nutrition respectively.² This is supported by a comparative study of ICDS and non ICDS beneficiary children in Maharashtra. They observed that most of the ICDS children (73%) and only 47% of non-ICDS children had normal eyesight. significant higher height and weight of the children who attended AWC centres than those who did not attend ICDS centres. Dietary analysis of these children revealed that calorie, protein, fat and iron intake was higher in the children attending ICDS centres as compare to the children who were not attended ICDS centres.¹⁰
- b. On an average AWC was out of centre for six days in three months or two days in a month. Including holidays and Sundays and personnel leaves and the work related to surveys under many national health programs she can provide little time to children. This leaves children under the supervision of helper alone who is uneducated most of the times and will be busy in cooking and cleaning activities. This might be one of the reasons why parents are admitting children to private set ups to give maximum learning avenues in this competitive era. This is also observed by Niti Ayog in its evaluation as they opined "The opening of public nursery school in urban and rural areas poses a great threat to the enrollment of children in AWCs nowadays unless the infrastructural and other facilities of AWCs are upgraded".²

CONCLUSION

Thus in the field practice area, most of the AWCs had minimum required infrastructure and other facilities compared to other parts of the country. Community ownership of these centres can improve their quality. There is a need to improvise the method of teaching and service providing to hold back these children at AWCs which cover psychosocial, health and nutritional

development of these children are more comprehensive caretakers than the private set ups.

Limitations

The study findings might be biased as they are from AWCs situated in field practice area of a private Medical college which has engaged in many community based programs. Random sampling of AWCs from whole district would have given better idea about the status of ICDS scheme.

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